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# LAND REFORM IN AFGHANISTAN (LARA)

## JALALABAD CITY PROFILE

March 2013

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# LAND REFORM IN AFGHANISTAN (THE LARA PROJECT)

Jalalabad City Profile

MARCH 2013

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## **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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# ACROYNMS AND ABBREVIATIONS

AGCHO	Afghan Geodesy and Cartography Head Office
AO	Assistance Objective
AREU	Afghanistan Research and Evaluation Unit
MAIL/ARAZI	Afghanistan Land Authority, a directorate of MAIL
CDC	Community Development Councils
COP	Chief of Party
CPAU	Cooperation for Peace and Unity (Human Security Project)
DAIL	Provincial Department of Agriculture Irrigation and Livestock
DCOP	Deputy Chief of Party
DFID	United Kingdom's Department for International Development
DUDA	Department of Urban Development Affairs
GIRoA	Government Islamic Republic of Afghanistan
GDMA	General Directorate of Municipal Affairs
dTS	Development and Training Services Inc.
KURP	Kabul Urban Reconstruction Project
IDLG	Independent Directorate of Local Governance
ILS	International Land Systems
JWSD	Jalalabad Water Supply Department
LARA	Land Reform in Afghanistan
LTERA	Land Tenure and Economic Restructuring in Afghanistan

MAIL	Ministry of Agriculture, Irrigation, and Livestock
MOU	Memorandum of Understanding
MUDA	Ministry of Urban Development Affairs
NEPA	National Environment Protection Agency
NVDA	Nangarhar Valley Development Authority
PIA	Public Information Awareness
RAMP-UP	Regional Afghan Municipalities Program for Urban Populations (USAID project)
USAID	United States Agency for International Development

# PREFACE

The United States Agency for International Development (USAID) Land Reform in Afghanistan Project (LARA Project) is managed by Tetra Tech ARD under USAID Contract No. 306-C-00-11-00514-00, with implementation assistance from its partners Tetra Tech DPK, International Land Systems (ILS), Development & Training Services Inc (dTS), and Landesa (formerly the Rural Development Institute).

LARA project's primary government partners are MAIL/MAIL/Arazi (formerly the Afghan Land Agency), the Ministry of Urban Development Affairs (MUDA), the Independent Directorate of Local Governance (IDLG), as well as the Supreme Court and selected local municipalities.

The purpose of the LARA project is to develop a robust, enduring, and Afghan-owned and-managed land market frame work that encourages investment and productivity growth, resolves/mitigates land-based conflict, and builds confidence in government's legitimacy, thereby enhancing stability in Afghan society.

The Project continues USAID/Afghanistan's support for land reform and land rights strengthening that began through the earlier LTERA Project. The LARA project currently comprises an 18-month Base Period and an 18-month Option Period, with a contract amount of \$41.8 million. The LARA project is designed to contribute to USAID's AO and Afghanistan National Development Strategy. Three influences will help shape The LARA project's contributions to this Objective: (1) the foundations provided by the former USAID Land Tenure and Economic Restructuring in Afghanistan (LTERA) project that provides a starting point and methods that can be adapted; (2) USAID/Afghanistan management objectives including Afghanization and conflict mitigation; and (3) the following major LARA project objectives:

- Improve property rights delivery (land administration and formalization);
- Enable all citizens (women, minorities, and vulnerable populations) to exercise their rights through public information awareness (PIA);
- Strengthen land dispute resolution processes to reduce conflict and promote peace and stability;
- Promote economic development through clear and enforceable property rights, PIA, land rights delivery, and land dispute resolution; and
- Strengthen institutional, policy, and legal reform to secure property rights for Afghan citizens;
- Provide assistance in the cross cutting areas of gender, training, PIA, and private sector development.

These objectives are supported by three components that provide the over-arching structure for Programming activities and tasks in the work-plan areas follows:

1. **“Informal Settlements & Formalization”**- Support MUDA, AGCHO, IDLG, and the Municipality of Jalalabad with informal settlements upgrading, formalization, cadastral mapping, laws for urban planning and land use regulation, and training in planning and enforcement. Also, this

project strengthens tenure security by supporting the Supreme Court and communities with rights formalization and informal dispute resolution.

2.       **"Legal Framework"**- Provide limited assistance to MAIL, MAIL/Arazi to identify, manage, lease, and obtain revenue from Afghan government lands and provide targeted technical assistance.

3.       **"Capacity Building"** - Build capacity of public (AGCHO, MAIL, MAIL/Arazi, IDLG, MUDA, Supreme Court) and private sector land service providers to improve and streamline land tenure processes to Afghan private and public sectors.



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This work would have been materially and intellectually impossible without the vital inputs of a formidable pool of professionals that shared ideas, knowledge and time. As many of them are in fact from *Nangarhar*, they patiently introduced me into the intricacies of urban life in Eastern Afghanistan.

Because of their efforts, I associate the urban places of Jalalabad and its region with a dynamic culture, a splendid environment and a people made by multiple communities. Wali Kandiwal guided me through the city, pointing to features and aspects I would have certainly missed without his competent presence. Mansoor Popalzai provided a wealth of knowledge about the most remote alleys and *ada*. Mujiburrahman Shenwari led me through local networks with practiced skills while taking informative, intelligent photos. Faiqa Zeh Hussain introduced me to a local web of women leaders and activists that changed my view on a critical dimension of governance and power in the eastern region. To all of them, and to the entire USAID LARA team in Jalalabad, I am sincerely grateful.

My debt with Nasir Popalzai, cadaster specialist and GIS guru who produced all the maps with craft and artistry, is profound. His enthusiast and laidback professionalism helped me out in the most challenging representations of the urbanization dynamics around Jalalabad.

Anna Soave was a dependable, supportive and dedicated supervisor across my entire work within the Land Reform in Afghanistan Project. Her passion for the development of Afghan cities is contagious: because of Anna, demanding schedules and taxing deadlines turned into possible tasks, and often pleasant assignments.

My good friend Wamiqullah Mumtaz found time to discuss my views in spite of a busy schedule at the Independent Joint Anti-Corruption Monitoring and Evaluation Committee. I resisted the temptation to discuss here the key issues he is addressing in his forthcoming work on *Shafa* and land-use.

A number of officials, local leaders and residents in Jalalabad decided to invest their time in interviews, focus group discussions and site surveys which made this work possible. I cannot mention them all, but I do hope that this city profile might eventually help them in the daily construction of the physical, institutional and social structure that sustains metropolitan development around Jalalabad.

# EXECUTIVE SUMMARY

2002 was the year with the largest number of returnees moving to Jalalabad from Pakistan: almost 120,000 people. Yet, in 2012, the Central Statistics Organization (CSO) estimates a city population of only 206,500. If the population statistics by CSO and the UNHCR-estimated flows from Pakistan do not tally, those appraisals of the urban population that set it around a million are problematic too. The five central urban districts encompass a surface of 19.13 square km (Figure 2). Such an area cannot accommodate a population between 500,000 and 1,000,000 dwellers. Therefore, a first challenge for urban planners at work with Jalalabad growth is the array of discordant figures about the actual number of its residents (Table 1.1). More so, because - unlike the data on city population - figures for the inhabitants of Nangarhar province present a consistent annual progression where natural population growth and influx of returnees are plausibly explaining most of the variation.

The paper argues that while demographic estimates for Nangarhar deal with a relatively well defined geographical entity, this is much less the case for Jalalabad resident population. What most residents and many city managers call “Jalalabad” is in fact the broad area in this valley of the Kabul River which has been swayed by the massive urbanization process started after the fall of the Taliban Emirate.

In the past 15 years, Jalalabad has not expanded primarily by widening its urban core over the bordering rural areas and eating up neighboring villages. On the contrary, it has mostly grown by consolidating its links with minor centers scattered across the two surrounding districts of Surkh Rod and Behsud. In fact, at the onset of the urbanization process, the two adjacent districts had together a larger population than the provincial capital. Surkh Rod and Behsud together housed 15.7% of Nangarhar population, while just 15.3% of the provincial residents lived in Jalalabad.

A few interpretations of Jalalabad growth in terms of urban sprawl that swallows up chunks of countryside - destroying in the process assets and resources - sounds legitimate as the challenges are real. However, those interpretations miss the opportunities that the formation of a metropolitan region offers. The creation of a broader urban space around Nangarhar provincial capital is not inevitably a process that ravages rural assets. It can be an opportunity to preserve and even enhance resources available in the districts. Leapfrogging to district-level development poles and larger centers in Surkh Rod and Behsud, urbanization could turn into a framework for sustainable growth.

Discussing the urban growth model, the paper maintains that we are not dealing here with urban sprawl, but instead with the opportunity to develop a multi-polar metropolitan space, which could sustain a balanced utilization of natural resources (water as a first), promote a dynamic local economy, and renovate the symbols of an ancient urban culture.

The evidence of a rapidly expanding urban footprint is undeniable. Jalalabad generates 400 ton/day of solid waste of which it manages to collect 250 with a collection efficiency of 62% (Table 2.3). And if collection is problematic, it is just a part of a broader challenge. The city and its region have no sanitary landfill, or other safe waste disposal facility. In a largely urbanized valley, where a million people live, the threat from this situation is immediate and serious.

The absence of a waste management plan that could integrate waste prevention, collection, recycling and disposal is definitely daunting, as it jeopardizes directly public health and threatens vital resources for Jalalabad metropolitan region: its groundwater, the Kabul River, and the river banks. The course of action currently privileged relies on a shifting system of dumpsites, where agricultural land - mostly in Behsud district - is turned into open dumps. Open dumps are filled to the brim and then basically abandoned to shift to the following ground.

A few immediate steps are considered here (Chapter 2). With respect to the disposal system, two at least are the necessary conditions and minimum requirements: the introduction of measures to line the bottom of landfills and prevent leachate from reaching the groundwater; and the location of waste disposal facilities outside the floodplains of Kabul River. As to the governance mechanisms, the ongoing waste crisis and the lack of a waste management system should rise to the level of priority and enter the main agenda of key stakeholders at metropolitan level – Jalalabad municipality, provincial governor, DUDA, DAIL and district administrations, at least – and national as well (MUDA, GDMA, MAIL, and NEPA at least). Finally, in terms of planning instruments, the waste crisis demands a metropolitan approach, where plans and regulations assume the city region dimension of waste generation and disposal. Planning instruments should take in the real size of Jalalabad footprint (see Figure 3): a 488 km<sup>2</sup> metropolitan region set over the 80-mile valley of Kabul River.

The paper points to the fact that the vast majority of residents depend on wells – some unprotected – to procure their drinking water. Despite a notional coverage of the whole city core, whose resident population approximates 55,000 households at least, Jalalabad Water Supply Department (JWSD) connects only 9,000 households in the five central nahias (urban districts). Accordingly, piped household connections would account for no more than 16% of the population in the core catchment. Inside the 19 km<sup>2</sup> occupied by the central districts the system of piped water supply shows gaps so significant that it covers just 18% of the service area. And JWSD service outside the metropolitan core is negligible

Unimproved drinking water sources play a more significant role if we turn to the greater Jalalabad region. Likely, unprotected dug wells account for a larger share of the total supply as we move to the metropolitan scale; and this may be the case for surface water too.

Whether an exclusive focus on piped household connections is justified, or instead – in the context of Jalalabad - more institutional energy should be spent to procure safe water to the entire population, for instance by improved monitoring of water quality from public standpipes, dug wells and boreholes, is open to discussion. Empirical evidence from the work conducted by USAID LARA with residents in Campoona highlights the importance of “non-revenue” water sources – such as public standpipes - in JWSD portfolio to ensure safe water supply to communities settled in areas with high risk of contamination.

A role for JWSD that matches the challenges ahead entails the capacity to operate in a catchment encompassing Jalalabad metropolitan region, requires a new determination to include wastewater management within its responsibilities, and demands a strategy to advance safe water sources for the whole population. Whether this shift in catchment and objectives can come about through collected water revenues is doubtful. Table 2.10 illustrates that out of total costs amounting to US\$ 255,371 in 2009, the total revenues represented a quite meagre 32%.

The paper identifies local forces modeling the ongoing change in land uses. They include the farming interests linked with the agricultural vocation of the valley. Then, Pashtun institutions, communal values, shared practices, and tribal codes, which frame the experiences of many Nangarhar communities, guide important aspects of the urban transformation too. Another local force to reckon with is the flows of returnees - but also displaced people and economic migrants – re-entering the province, or striving to settle in Jalalabad from Kunar and the whole eastern region: they shape demographic and social profiles of the new urban places. Finally, the new economic classes associated with trade and a few manufacturing initiatives hold sway on critical dimensions of the urban transition. The paper explores how the identified local forces negotiate and interact with external actors and physical constraints.

Urbanization in the region of Jalalabad occurs often by unregulated land reclamation, filling waterways with solid waste to procure land for urban developments. Settlements encroaching over rivers and expanding over unstable soils, inadequate storm-water management, and lack of sewerage

may become the recipe for urban floods, as watershed constraints to metropolitan growth transform in threats to Jalalabad residents.

The paper discusses the drive towards marginal lands induced by demographic pressure in and around Jalalabad, and the role of reclamation as a way to expand the city over marginal lands. In Jalalabad reclamation proceeds primarily through unregulated disposal of municipal solid waste and it occurs particularly in portions of the metropolitan space specifically identified as prone to flooding (Figure 10). As new residents are drawn to the reclaimed urban areas by the comparatively low prices, informal urban growth over reclaimed tracts of the valley waterways stands among the most severe and urgent challenges for Jalalabad city planners.

Unpredictable hydrologic regimes, morphology of the city and encroachment over the floodplains turn into a significant menace, as unregulated land reclamation along the river banks determines the loss of flood storage capacity and the obstruction of flood-ways.

In such context, the paper proposes to contain encroachment over the valley waterways. While land reclamation can be appropriate to other situations or later stages of the urbanization process, it becomes a major hazard in Jalalabad, as storm-water drainage is poor, sewerage absent, and the city morphology risky.

Since the risk of urban floods extends to communities downstream, efforts to regulate and limit reclamation of marginal lands should be set at metropolitan level, without overlooking settlements beyond the central urban districts.

Expectedly, competition between farming interests and urban development has been intense and has spawned a number of conflicts for land and for water. Yet, the paper argues that the capacity to integrate the canals of Nangarhar Valley Development Authority (NVDA) within Jalalabad metropolitan area might become an outstanding character of the land use arrangements that accompany urbanization in Nangarhar and a major opportunity for balanced and sustainable urbanization.

In fact, a course of action leaning towards more evictions – or even negotiated relocations – seems an unrealistic approach to the growing pressure over NVDA lands that skirt the urban core of Jalalabad. The costs for the whole city of such course of action would be substantial and its social impact too. The paper suggests that a sustainable path that acknowledges metropolitan development as well as the importance of lowland irrigated agriculture must aim at a double compromise: about lands and about water. But an uncompromising stance by NVDA could hinder or undermine adoption and enforcement of the necessary planning instruments at metropolitan scale. Hence, the complex balance between urban and rural functions in Jalalabad metropolitan area necessitates sustained multi-stakeholder coordination.

Strategic planning choices cannot be grounded in anecdotes; policies to address metropolitan challenges, such as the current waste emergency, must depend on accurate data, which are still desperately missing. This City Profile intends to indicate areas where reliable information is needed, and advocate a resolute drive in that direction.

# CHAPTER ONE

## 1. DYNAMICS OF GROWTH

### 1.1. Jalalabad population

Estimates of Jalalabad resident population<sup>1</sup> are remarkably inconsistent. International and government agencies that have been working in the city since 2001 have produced a vast– but discordant - array of demographic data: figures diverge sharply between offices, organizations and programs. Discrepancies are so substantial that the available figures might pertain to different geographical scales, as if they concerned different urban objects.

**Table 1.1:** *Estimates of Jalalabad population*

Jalalabad resident population	Source	Year
180,000 <sup>2</sup>	CPAU Human Security Project	2010
181,000 to 500,000 <sup>3</sup>	AREU	2006
ca. 200,000 <sup>4</sup>	Environmental Mitigation and Monitoring Plan, USAID LARA	2012
206,500 <sup>5</sup>	Central Statistics Organization	2012
500,000 <sup>6</sup>	Mayor of Jalalabad	2006
600,000 <sup>7</sup>	Municipal Planning Department	2013
832,022 <sup>8</sup>	UNDP ASGP	2011
1,000,000 <sup>9</sup>	Deputy Mayor	2011

<sup>1</sup> All people who usually live in Jalalabad at a given date

<sup>2</sup> CPAU indicates that urban residents represent 13% of the provincial population, estimated at 1,383,900: their report quotes UNFPA population figures for 2010 (CPAU Human Security Project, 2010, p. 5)

<sup>3</sup> AREU quotes estimates from CSO (181,000) and GOA “Securing Afghanistan’s Future” (500,000) (Schütte, 2006, p. 3)

<sup>4</sup> The report points out that “the numbers [...] are calculated within the municipal boundaries and exclude the sprawling informal settlements that have developed to the north and south of Jalalabad”. It also relays that “according to the district officials there are a total of 584,783 people living within the official boundaries – but this figure probably reflects day population rather than actual residents” (Land Reform in Afghanistan Project, April 2012, p. 3).

<sup>5</sup> *Settled Population by Civil Division, Urban, Rural and Sex - 2012-13*, 2012

<sup>6</sup> In the workshop organized by AREU on “Urban Poverty Reduction in Afghanistan”, M. Naiem Stanazai, at the time Mayor of Jalalabad, indicated that the city population had passed from 40,000 residents when the master-plan was developed to the current population of half a million” (Stanazai, 9-10 August 2006)

<sup>7</sup> Interview with head of the department on 13<sup>th</sup> February 2013

<sup>8</sup> ASGP refers explicitly to six urban districts (*nahia*), including a sixth *nahia* lying outside Jalalabad current municipal boundaries

<sup>9</sup> Hakimudin Omar Khel, in his note to USAID/LARA on Jalalabad seems to consider both the population resident in the core five *nahias* of the city and residents from surrounding districts who travel daily to the city to work there or access the urban service infrastructure: “the city has nearly one million population including people [who] come from surrounding districts for their daily needs and the municipality has not capacity to provide all services in time being” (Khel, 2011).

1,000,000 <sup>10</sup>	Nangarhar Inc.	2010
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The figures listed in Table 1 are just a possible sample of the estimates offered across the years. What matters, though, is that the divergence between estimates does not depend on the date they were formulated. Hence, natural population growth or annual migrations to the city cannot account for the discrepancies but for a limited part.

Furthermore, the absence of a recent census<sup>11</sup> cannot account for a range as wide as 800,000 between lowest and highest values, especially if we consider that data on the provincial population are far more uniform.

**Table 1.2:** *Estimates of Nangarhar population*

<i>Nangarhar population</i>	<i>Source</i>	<i>Year</i>
1,261,900 <sup>12</sup>	Program for Culture and Conflict Studies	2007
1,342,514 <sup>13</sup>	The Provincial Development Plan of Province <i>Nangahar</i>	2007
1,383,900	CPAU Human Security Project	2010
1,436,000	Central Statistics Organization	2012
1,488,140 <sup>14</sup>	Department for Disaster Preparedness	2005

Unlike the figures on Jalalabad population, those for the provincial residents present an annual progression<sup>15</sup> where natural population growth and influx of returnees from Pakistan are plausibly explaining most of the variation. Besides, the lack of census data might justify a spread of less than 230,000 units owing to different methodologies and definitions adopted for the estimates.

While demographic estimates for *Nangarhar* deal with a relatively well defined geographical object, this is much less the case for Jalalabad resident population.

Only in October 2012 the official maps of the five *nahias* that make up the urban core were officially endorsed and transmitted to GDMA<sup>16</sup>: the collation of the boundaries between them and the surrounding districts<sup>17</sup> produces by default the boundary line of the dense core at the heart of Jalalabad metropolitan region.

The five *nahia* at the center of the metropolitan region encompass an urban area of 19.13 square km (19,128,476 m<sup>2</sup>). Such an area cannot accommodate a population between 500,000 and 1,000,000 dwellers.

<sup>10</sup> In its blueprint for regional development, Nangarhar Inc. comments that the city population was 780,000 in 2008, but was expected to reach 1,000,000 by 2010 (Nangarhar Inc., 2008, p. 45)

<sup>11</sup> The last official Population Census in Afghanistan was in 1979 and covered 67% of the districts

<sup>12</sup> Most figures in the provincial profile developed by the Program from Culture and Conflict Studies at the Naval Postgraduate School seem to rely on the Regional Rural Economic Regeneration Strategies (RRERS) programme as well as from UNDP Afghanistan (Program for Culture and Conflict Studies, 2007)

<sup>13</sup> ANDS Secretariat – which authored that plan - adds that “there are 18245 households in the province, and households on average have 8 members” (ANDS Secretariat, August 2007).

<sup>14</sup> Department for Disaster Preparedness, October 2005, p. 3

<sup>15</sup> With the exception of the figure in the report by the Department for Disaster Preparedness

<sup>16</sup> The five maps of the urban districts (*nahia*) were developed by USAID/LARA, then endorsed by the municipal government and finally submitted to GDMA in the last half of 2012 (USAID/LARA, October 2012)

<sup>17</sup> Surkh Rod and Behsud

The Urban Sector Strategy 1387 – 1391 conjectured that the average residential plot size in areas of new urbanization would be 300 square meters<sup>18</sup>, with a typical allocation to residential use comprising 60% of a settlement area. Even assuming that within Jalalabad core city the average size of an urban plot is 2/3 of the area calculated by ANDS - i.e. 200 m<sup>2</sup> - a core urban area of 19.13 square km, with a total residential area of about 11.48 square km, could accommodate about 55,000 households, namely circa 330,000 residents.

The land use analysis run by USAID/LARA with GIS-based software over combined aerial photography and satellite imagery of year 2011 reinforces this conclusion. The LARA project identified a 53% residential share of city land – 9,608,092 m<sup>2</sup> - within the urban core formed by five *nahia*. From a sample of 17,329 residential parcels USAID/LARA calculated an average size of 486 m<sup>2</sup>. Resting on these figures, the core of the metropolitan region would contain 19,770 residential plots. Because of the high rate of multiple-occupancy identified by the baseline survey conducted in the initial phase of the project<sup>19</sup>, an estimate of 11 residents in each plot<sup>20</sup> is adopted for the calculation of the urban population, which is then set at 217,470.

While the core of Jalalabad region might accommodate a resident population ranging between 215,000 and 330,000 at the most, those estimates that set the number of urban dwellers in the region at much higher levels are not wrong either. They simply describe different urban spaces.

## 1.2. Urban spaces in the metropolitan region

The old center of Jalalabad occupied a pocket on the south of what is now *nahia* 1, at the border with *nahia* 4, more or less between the Peace Park and Abdul Wakil School. German planners conducted a survey of the area in the late forties<sup>21</sup>: they found a population of about 40,000 settled over four square kilometers. Gradually the center grew and in 1958 a first *nahia* was created<sup>22</sup>. Hardly any resident or visitor of the city today could pinpoint the urban nucleus explored by the city planners from Germany. Likewise, most dwellers – and even a few city managers – of Jalalabad would be perplexed by any plan to downsize the present-day vast urban expanse to the 19 square kilometers or so that accommodate the first five *nahia* and their roughly 220,000 inhabitants (Figure 1).

Actually, the awkward numbers about Jalalabad dwellers hint to the existence of multiple urban entities superimposed over the vast expanse that stretches from Darunta to Ghazi Amanullah Khan, from Qasim Abad to Doulat Zai, from the industrial park of Sheikh Mesri to that planned in Hesar-e-Shahi. As the rural town<sup>23</sup> surveyed in the late forties is no more present-day Jalalabad, also the urban core that encapsulates the five *nahia* is no more the whole city after more than a decade of accelerated urbanization that has engulfed the surrounding villages and leapfrogged to settlements once far apart. Jalalabad appears to enclose a much larger area than 19 square kilometers; it now encompasses a vast territorial expanse in many respects functionally integrated and socially differentiated to create what can be legitimately termed a metropolitan region<sup>24</sup>.

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<sup>18</sup> "Presently the average residential plot size in new areas, such as the returnee townships, is about 300 square meters" (ANDS, 2008, p. 50)

<sup>19</sup> Based on the results from the survey 50% of the residential plots in informal settlements are occupied by a single household, 32% by two or three households, and 18% by more than three households (Peace Humanitarian Organization, 30 April 2012, pp. 46-47)

<sup>20</sup> As a comparison, in 2007 a survey of the residents in Kabul yielded a figure of 8.8 persons in each property (ANDS, 2008, p. 47)

<sup>21</sup> In the account of Jalalabad former mayor, Naiem Stanazai, German city planners surveyed the urban centre in 1948 (Stanazai, 9-10 August 2006)

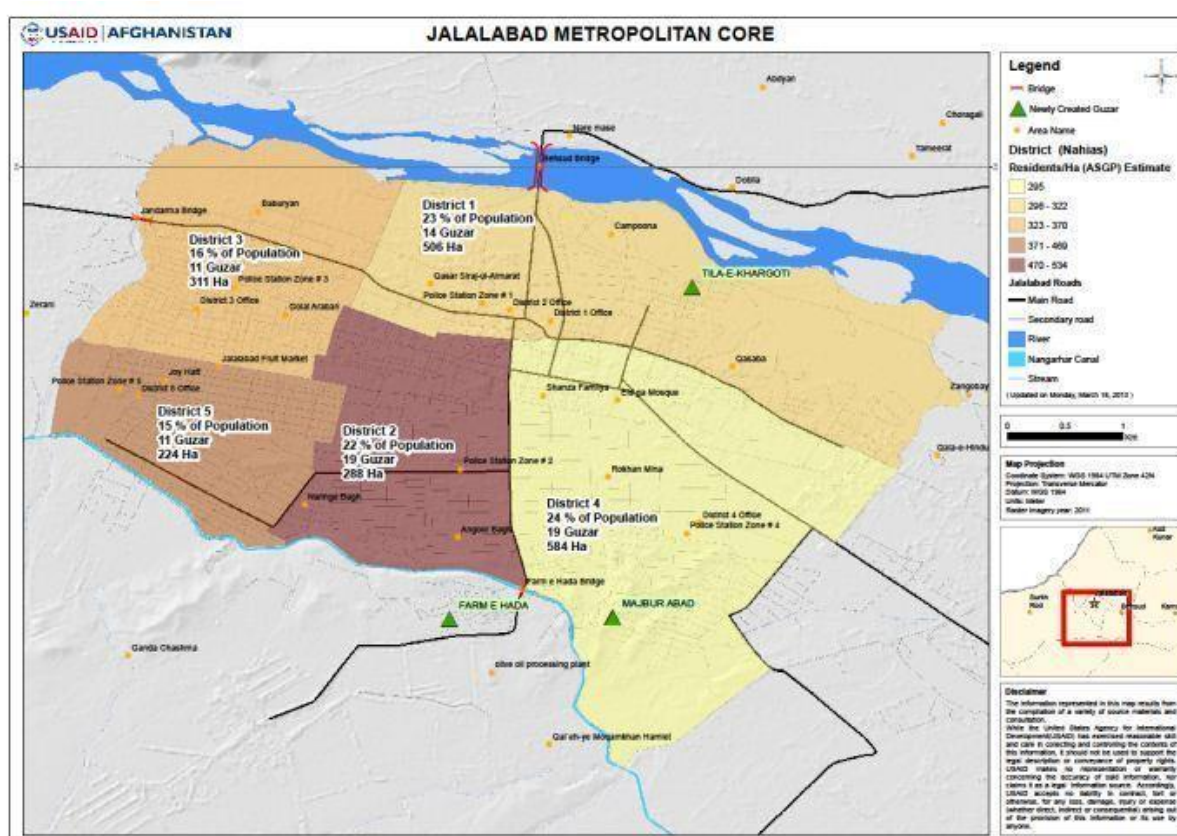
<sup>22</sup> Mumtaz, Jalalabad's "Grab-Town": A Difficult Case of Illegal Settlement and Land Dispute, May 2012

<sup>23</sup> The term "rural town" to describe Jalalabad was used as recently as 2005 (Asian Development Bank, March 2005, p. V), which may give a clue on how fast the urbanization process has been.

<sup>24</sup> The term was introduced by Manuel Castells to describe urbanization in the information age (Castells, 2005, p. 46)



**Figure 1: The Metropolitan Core**



What most residents and many city managers call Jalalabad is in fact the area swayed by the massive urbanization process started after the fall of the Taliban Emirate. If in 2004 an appraisal of 17 inhabitants per hectare across Jalalabad territory could perhaps be plausible<sup>25</sup>, today that figure would make little sense. But rapid urbanization has not only caused the densification of the urban core: resting on solid and ancient rural – urban linkages<sup>26</sup> and on social networks that characterize the Pashto eastern community<sup>27</sup> urbanization has led to the creation of a broad urban region.

A new plan to be soon decreed for the city by the President<sup>28</sup> seems to consider this new metropolitan dimension. The new master plan – reportedly for an area exceeding 150 square kilometers<sup>29</sup> (Figure 7, Chapter 3) - and the area plans for the satellite urban centers might affect a vast expanse of almost 180 square kilometers, directly through land use provisions and indirectly through the planned infrastructure. The new planning instruments reach as far as Darunta to the northwest and as far as Ghazi Amanullah Khan to the southeast (Figure 2).

**Figure 2: The Metropolitan Region**

<sup>25</sup> UNFPA in 2004 attempted an estimation of the population density of each district in the province of Nangarhar (UNFPA, 2004, p. 4), however it clearly indicated that in absence of more information on inhabitable land density figures could prove misleading (p. 1). According to the estimation, Jalalabad district had a density of 1,708 people / km<sup>2</sup>, or ca. 17 residents / ha.

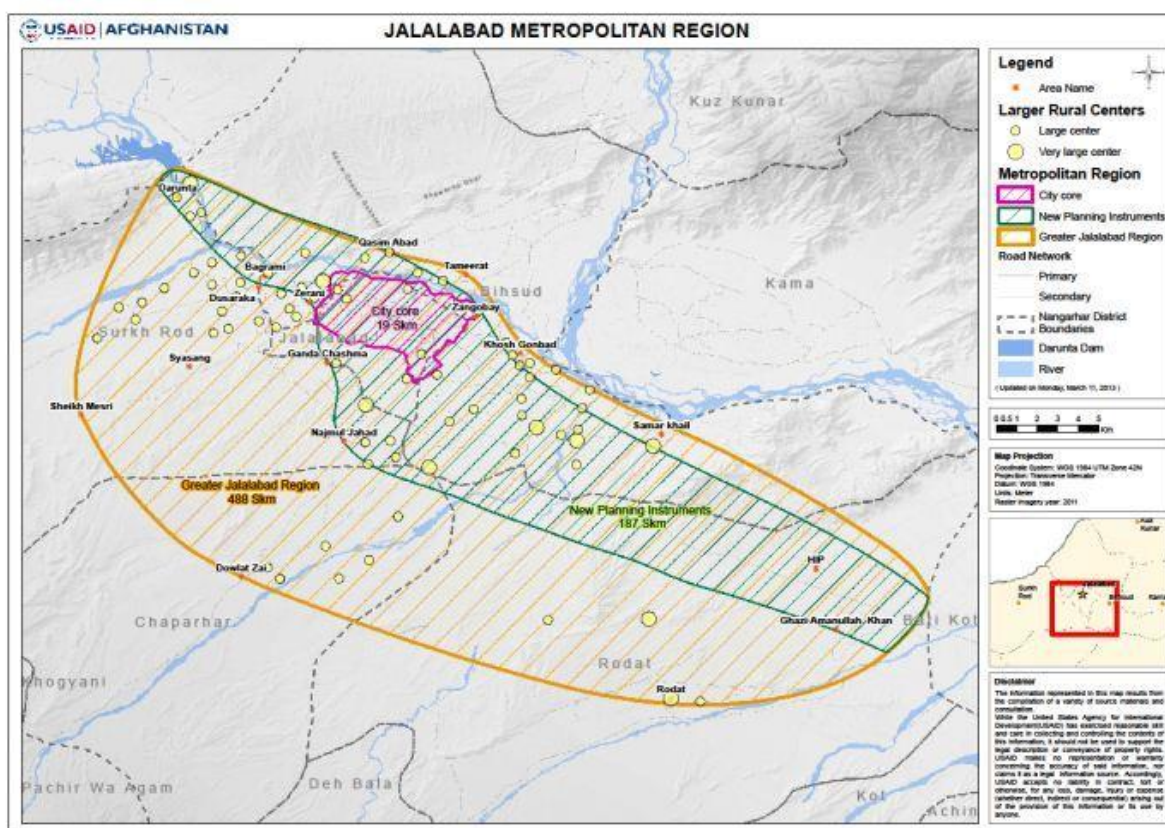
<sup>26</sup> Tacoli, 2006

<sup>27</sup> Nangarhar Inc. indicates “the cultural and resident *Pashtun* community cross-border with Pakistan’s Peshawar District” among the main stakeholders of any planning exercise in the region (Nangarhar Inc., 2008, p. 10).

<sup>28</sup> The precise timeframe for the presidential decree issuing the new master-plan of Jalalabad was not yet available in February 2013 (interview with officers of the municipal construction department on 13<sup>th</sup> February 2013)

<sup>29</sup> Mumtaz, reviewing previous discussions on the planning instruments for Jalalabad, refers to 27 km<sup>2</sup> where a population of more than a million is settled (Mumtaz, Jalalabad’s “Grab-Town”: A Difficult Case of Illegal Settlement and Land Dispute, May 2012, p. 4)





The importance of the new plans should not be underestimated: planning instruments can play a vital role in organizing Jalalabad sustainable development, if they capture its real dimension that certainly exceeds the current municipal area. There is in fact a risk in misjudging the width of the metropolitan region: its underestimation would lead to overrating densities within Jalalabad urban core, missing the importance of the multiple growth poles that are emerging. If 17 inhabitants per hectare – the tentative estimation of density within the city in 2004 - is a figure that certainly does not reflect the concrete experience of a resident in *nahia* 2 today, other estimations that lead to more than 500 dwellers per hectare might be off the mark<sup>30</sup> too. The city has undoubtedly grown, but a large portion of this growth has occurred in peri-urban settlements, mostly informal, and in villages once rural and quite remote, but now tightly associated with the city center.

### 1.3. City sprawl versus multi-centered metropolitan region

City sprawl provides a possible interpretation of urbanization around Jalalabad, where residential, commercial and industrial uses “swallow up”<sup>31</sup> farmland at the fringes of the urban core. Two assumptions underlie a “city sprawl” account of urbanization in Nangarhar: Jalalabad would have expanded as a compact volume spreading over a relatively pristine countryside; and, in the process, the city would be bound to wear away natural resources and social networks, which were preserved in the original rural settings. This account may have valid justifications: for example, the mass of municipal solid waste produced by the city that expands has spilled out of its boundaries to contaminate critical water sources; and housing projects do threaten communal rights over natural

<sup>30</sup> To accommodate 153,910 dwellers within the boundaries of *nahia* 2, we would obtain a density of 534 people per hectare. 153,910 are the residents estimated by UNSP-ASGP for *nahia* 2 in 2011

<sup>31</sup> A comprehensive URD study in 2006 reports that “irrigated land has been swallowed up by the urban sprawl” (Mahmoudi, 2006, p. 46). Local authorities lament the “unregulated expansion of settlements on the outskirts of the city” (Peace Humanitarian Organization, 30 April 2012, p. 10)

resources, rangelands and pastures<sup>32</sup>. But at a closer scrutiny, the view of the urbanization in *Nangarhar* as Jalalabad sprawl appears unconvincing.

Jalalabad has not primarily expanded widening its urban core over the bordering rural areas and eating up neighboring villages. On the contrary, it has mostly grown by consolidating its links with minor centers scattered across the two surrounding districts of *Surkh Rod* and *Behsud*. In this respect, minor settlements around the city core have often been the engine of the growth that has brought about the metropolitan region.

At the onset of the urbanization process, the two adjacent districts had together a larger population than the provincial capital. *Surkh Rod* and *Behsud* together housed 15.7% of *Nangarhar* population (UNFPA, 2004, p. 4), while 15.3% of the provincial residents lived in Jalalabad. *Behsud* alone accommodated 8.86% of *Nangarhar* population and had rapidly urbanized (Comprehensive Agriculture and Rural Development Facility, 2011) since the first years of the century, with an estimated 40% of its residents earning their incomes in economic activities outside the primary sector<sup>33</sup>. At the start of the urbanization rush, both the districts around Jalalabad had large networks of substantial settlements with more than 1,000 residents: 35 villages in *Surkh Rod* exceeded 1,000 dwellers and 48 villages in *Behsud* (UNFPA, 2004, p. 7)<sup>34</sup>. Already in 2004, a few largest centers were sizeable settlements of up to 17,000 residents<sup>35</sup>. Interestingly, the predominance of large villages in the districts of *Nangarhar*, especially the rural areas closer to Jalalabad, set apart this province from many others across Afghanistan - and in the country eastern region - where tiny hamlets and small villages prevailed in the settlement patterns. To connect a broad web of substantial rural centers, *Behsud* had an infrastructure of 30 kilometers of asphalted roads and 120 kilometers of graveled or stone-paved feeder roads (Comprehensive Agriculture and Rural Development Facility, 2011).

The interpretation of Jalalabad growth in terms of urban sprawl that swallows up chunks of countryside - destroying in the process assets and resources - sounds legitimate as the challenges are real. However, it misses the opportunities that the formation of a metropolitan region offers. In fact, the creation of a broader urban space around *Nangarhar* provincial capital is not inevitably a process that ravages rural assets. It can be an opportunity to preserve and even enhance resources available in the districts. Leapfrogging to district-level development poles and larger centers in *Surkh Rod* and *Behsud*, urbanization could turn into a framework for sustainable growth.

From an environmental perspective, a multi-center metropolitan region might allow urban agriculture to prosper, better withstanding competition from commercial, industrial and residential uses that threaten to crowd it out. Cast on a metropolitan framework, urban agriculture could exploit interstices and lucrative niches between interlinked centers. Urban farms within the metropolitan region could rely on strengthened rural urban connections to gain easier access to markets, achieving a level of returns that might protect the permanence of a primary sector otherwise threatened by the pressure on land and water from uses with higher profitability<sup>36</sup>.

An urban region with multiple centers, functionally integrated around the city core but spread out over a metropolitan area far broader than the original five *nahia*, might address congestion and keep down

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<sup>32</sup> The issue is aptly discussed by Liz Alden Wily also with cases from *Nangarhar* (Wily, February 2013, pp. 70-75)

<sup>33</sup> In *Behsud*, 25% of the district incomes originated from non-farm based employment and 15% from independent business and self-employment. The remaining incomes derived from agriculture (50%) and livestock raising (10%). The district profile of *Behsud* developed by CARD-F indicates also that "many of the district's residents derive their livelihoods from the city" (Comprehensive Agriculture and Rural Development Facility, 2011, p. 2).

<sup>34</sup> In *Behsud* the villages with more than 1,000 residents made up 62% of the units surveyed by UNFPA in 2004. In *Surkh Rod* too larger settlements accounted for the relative majority of the surveyed units (31%).

<sup>35</sup> The largest rural center appraised by UNFPA had 17,253 inhabitants (UNFPA, 2004, p. 2)

<sup>36</sup> Interestingly, a pull factor leading to the rapid urbanization of *Bagrami* - a settlement lying in the north western quadrant of the metropolitan region between the highway and Kabul River - seems to be the profitable fish farms that attract landless villagers in search of livelihoods from *Surkh Rod* and from as far as *Kunar* (focus group discussion with property dealers on 14<sup>th</sup> February 2013).

its costs, which represent a long-term threat to Jalalabad sustainable economic development<sup>37</sup>. In the past ten years or so, Jalalabad seems to have remarkably improved its position as a wholesale market: from a small-size center where commodities originating from Kabul transited on their way to Turkham<sup>38</sup>, to a significant hub in the trade between Afghanistan and Pakistan. In the last decade, Jalalabad has retained its role as strategic “mid-point of the most direct land route between Tehran and New Delhi” (Nangarhar Inc., 2008, p. 47), has captured a growing share of the trade with Pakistan and has benefitted of the commercial flows transiting through Pakistan, the latter boosted by the progressive implementation of the Afghanistan-Pakistan Transit Trade Agreement (APTTA)<sup>39</sup>. But heavy through-traffic from Pakistan to Kabul (DuVivier, July 2005, p. 24) might combine with traffic generated by the expanding functions of wholesale market and international trading center and might result in diseconomies associated with a tumultuous growth. An urbanization process in the form of a multi-center metropolitan region might tackle those diseconomies.

Finally, Jalalabad holds symbolic markers and cultural landmarks that speak to several communities and diverse cultural identities. Its landmarks and symbols bear on Afghan national values, such as for the site of Gandamak<sup>40</sup>; are associated with Afghan popular traditions as in the case of Mia Ali Baba shrine<sup>41</sup>; are engrained in the urban culture and build the residents’ collective experience of the city, as for the gardens of Seraj-ul-Emart<sup>42</sup>; or refer to the complex amalgam of Chinese, Iranian and Indian influences embedded in the *Gandharan* civilization, whose centers flourished around Jalalabad<sup>43</sup>. The collective symbols of Jalalabad are the assets that make the city a hub of a vast cross-border community<sup>44</sup>, linked by trade and traditions, with a complex history where acceptance of diverse influences has been far more important than often believed. Such a tolerant urban culture is evidenced not only by the remnants of the *Gandharan* past but also by the present urban celebrations and festivities: from the poetry contest to celebrate the time of the orange blossom to the Waissak festival of the Hindu community.

As the urbanization process centered on Jalalabad leapfrogs to settlements in *Surkh Rod*, *Behsud* and beyond, it meets symbols and landmarks scattered across the metropolitan region: be it the shrine of Mia Ali Baba, or the villages of Lalm<sup>45</sup> and Gandamak. From Seraj-ul-Emart to Hada the development of a metropolitan common space encounters powerful symbols, which suitable strategies can leverage for the establishment of adequate governance arrangements across the greater Jalalabad area.

Hence, we are not dealing with urban sprawl, but instead with the opportunity to develop a multi-polar metropolitan space, which could sustain a balanced utilization of natural resources (water as a first), promote a dynamic local economy, and renovate the symbols of an ancient urban culture.

For the progress towards a metropolitan region to be sustainable a few issues must be addressed: its footprint in terms of waste production, water consumption and demand of energy; the planned, informal and spontaneous land use arrangements<sup>46</sup>, and the regulatory mechanisms offered by state

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<sup>37</sup> Several analysts have discussed concerns on Jalalabad congestion in relation to its role as transit hub; for instance DuVivier, travelling from San Diego, raised this issue in 2005 (DuVivier, July 2005)

<sup>38</sup> Considering the five Afghan wholesale markets for horticultural products in 2004, Raphy Favre had found that Jalalabad with about seventy wholesalers and a volume of traded products of just 20,000 metric tons was the smallest (Favre, September 2005, p. 18). This seems to have changed.

<sup>39</sup> Signed on 18<sup>th</sup> July 2010 in Islamabad (Zyck, November 2011)

<sup>40</sup> Where on 13<sup>th</sup> January 1842 Afghan fighters defeated the British army in the First Anglo-Afghan War; the homonymous treaty was signed there as well during the Second Anglo Afghan War (26<sup>th</sup> May 1879)

<sup>41</sup> “notable for the popular belief that it cured insanity” (Hanifi, December 15, 2008)

<sup>42</sup> The gardens – and the vestiges of the palace built by Amir Habibullah – date back to a rather tumultuous phase of Afghan history: the palace was attacked and looted in 1929 in the riots that ousted Amir Amanullah, Habibullah’s son.

<sup>43</sup> The most renown being the village of *Hadda*, ca. 11 km south of the boundary of *nahia* 4

<sup>44</sup> The “greater Nangarhar and Peshawar community” outlined by Nangarhar Inc (2008, p. 7)

<sup>45</sup> *Gandharan* centre in Chaparhar district, 15 km from the municipal boundary

<sup>46</sup> As discussed by Abdul Baqi Popal and Jan Turkstra (Turkstra & Popal, 2010, pp. 9-10)

and market; and the local economic dynamics behind functional integration, social differentiation and generation of resources within the greater Jalalabad region.

# CHAPTER TWO:

## 2. JALALABAD FOOTPRINT

### 2.1. Urbanization and solid waste generation

#### 2.1.1. Solid waste generation

Most of the information available on overall solid waste and on waste streams<sup>47</sup> in Jalalabad is anecdotic in nature. And the general picture is bleak: drainage ditches overflowing with waste and often clogged up<sup>48</sup>; thoroughfares and internal alleys strewn with improvised dumps<sup>49</sup>; neighborhoods that dispose of their waste in wetlands and floodplains<sup>50</sup>. Besides, municipal services can seemingly collect a fraction of the solid waste generated in the city<sup>51</sup> and have no sanitary waste disposal plant, as none of the existing dumpsites corresponds to a sanitary landfill<sup>52</sup>.

Without precise data to quantify and characterize the solid waste for a city and its waste streams, not only is it impossible to monitor the performance of a waste management system aiming at its improvement, but it is also impossible to design it.

Comparatively, more information on solid waste is available for Kabul and Herat. Efforts to quantify overall generation of municipal solid waste in the Afghan capital trace back to ten years ago or so. A 2005 appraisal yielded a daily volume of 1,540 cubic meters of solid waste, with a daily generation per capita of 0.4 kg (Glawe, Visvanathan, & Alamgir, 2005). These figures are in line with global data on solid waste from urban residents in low income countries, as they range from 0.3 to 0.6 kg / day per capita (Guangyu, 2002). Few years later, in 2012, each Kabul resident was producing a daily weight of municipal solid waste that ranged between 0.31 and 0.43 kg per capita (Forouhar & Hristovski, July 2012). Data for Herat, recorded in the spring months, when generation of solid waste tends to peak, indicate a daily production per capita of 0.519 kg<sup>53</sup> (Shaïda, 2011, p. 27).

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<sup>47</sup> Main waste streams can be: residential, commercial, C&D (construction and demolition), industrial and hazardous (United Nations Environment Programme, 2009). Waste streams are not always distinct and discrete entities as – for instance – hazardous waste can be generated from industrial, C&D and even residential sectors. Municipal solid waste (MSW) can include residential, commercial and – in a few cases – industrial non-hazardous waste (ibid).

<sup>48</sup> “In many places in the city, rubbish is swept or thrown into roadside drainage ditches.... the waste prevents sewerage water from flowing in the drainage canals” (Mahmoudi, 2006, pp. 58-9)

<sup>49</sup> “If the dump trucks are out of service or the workload is too heavy, the piles remain on the edge of the street. City staff showed me many piles that they had been unable to remove that seemed like permanent features” (DuVivier, July 2005, p. 17).

<sup>50</sup> DuVivier reports that – for instance – solid waste was transported and dumped in the wetland of the floodplain immediately to the west of Behsud Bridge (DuVivier, July 2005, p. 17), in a 15-hectare area destined for a city park (Mahmoudi, 2006, p. 31). The practice was discontinued only in 2011 (communication from the director of the municipal sanitation department, 10<sup>th</sup> March 2013).

<sup>51</sup> For the informal settlements, municipal services are reported to reach only 20% of the sites in Jalalabad (Peace Humanitarian Organization, 30 April 2012, p. 67)

<sup>52</sup> See, for instance, the survey conducted by RAMP-UP East on the municipality's resources and capacities, Table 21 (RAMP UP East, October 2010)

<sup>53</sup> The author concedes that the figure may overestimate the generation of solid waste by Herat residents, since the research was conducted in springtime (March and April), when the production of municipal solid waste is above average (Shaïda, 2011).

**Table 2.1:** *Estimates of urban solid waste generation*

City	Year	Total solid waste: m <sup>3</sup> /day	Total solid waste: ton/day	Kg/day by resident	Source
Kabul	2005	1,540	1,080	0.4	Glawe, Visvanathan, & Alamgir
Kabul	2012			0.31 to 0.43	Forouhar & Hristovski
Herat (peak months)	2011	734.1	326.2 <sup>54</sup>	0.519	Shaida
Average city in low income country	2002			0.3 to 0.6	Guangyu

Resting on information from Kabul and Herat (Table 2.1), an estimate between 0.4 and 0.5 kg/day of solid waste per resident would seem reasonable in Jalalabad.

The relation between volume of solid waste and its actual weight depends on several factors, among them the relevance of the construction industry. In Kabul, construction activities seem to contribute significantly to the composition of solid waste: Glawe et al estimated in 2005 that construction debris makes up between 50 and 60% of Kabul solid waste content (Glawe, Visvanathan, & Alamgir, 2005, p. 3). Hence, a plausible ratio between cubic meters and tons of solid waste in Kabul could be set around 70%.

Between February and March 2013, USAID LARA endeavored to quantify the overall generation of solid waste in Jalalabad<sup>55</sup>. Generation data were revised against the quantity of solid waste actually disposed to those dumpsites which have been taking municipal waste from November 2012<sup>56</sup>. Yet, the figures obtained for Jalalabad show significant discrepancies with estimates calculated for Kabul. By and large, data computed for Jalalabad approximate better those estimated in 2012 in Herat.

**Table 2.2:** *Estimates of solid waste generation in Jalalabad, Herat and Kabul*

City	Total solid waste: m <sup>3</sup> / day	Total solid waste: ton / day	Ratio weight / volume	Kg / day / resident
Jalalabad (2013)	800 <sup>57</sup>	400	50%	0.8
Kabul (2005)	1,540	1,080	70%	0.4
Herat (2011)	734.1	326.2	44%	0.519

Undeniably, a rate of 0.8 kg/day of solid waste per capita is open to questions, insofar as it exceeds the limits which may be expected in urban areas of low income countries. Nonetheless, those limits are not identical across the entire spectrum of low income nations: considering – for instance – the least developed countries in Asia, the rate of solid waste per capita is variable and may be higher than

<sup>54</sup> Shaida, 2011, p. 35

<sup>55</sup> In coordination with the *Amiriat-e-Tanzifat* (the municipal sanitation department), whose director, Mr Barialay, strove to provide any possible information, devoting serious efforts to reconstruct realistic data on generation, collection and actual disposal. Being Mr Barialay at the centre of one of the most complex operations in the entire Jalalabad urban region, his commitment is commendable.

<sup>56</sup> The dumpsite in *Tameerat* between November 2012 and February 2013, then the new site in *Zangoye*

<sup>57</sup> Figure provided on 13<sup>th</sup> February 2013 by Mr Barialay, director of the municipal sanitation department in Jalalabad

0.8<sup>58</sup>. The daily estimate for Jalalabad would situate the metropolitan area of *Nangarhar* at the highest end of the range of values assigned to the urban waste generation in medium income countries (Guangyu, 2002). Puzzling enough, a figure of 0.8 kg/day would part sharply from any appraisal conducted in Kabul, including the most recent (Forouhar & Hristovski, July 2012), and would still be higher than the value calculated in Herat.

A ratio weight to volume of roughly 50% presented in Table 2.2 for Jalalabad was inferred in the assumption that construction activities<sup>59</sup> in the city have been dwindling since 2011. Conceivably, a sharp contraction is likely to lead to a relatively low ratio, by reducing the share of “white waste”<sup>60</sup> within the total production in the city. Moreover, a 50% ratio yields a relation between weight and volume closer to the data available from Herat (44%), the latter being an urban area whose waste generation processes may resemble those in Jalalabad.

A daily waste production per Jalalabad resident of 0.8 kg/day is premised on a catchment with a population of half a million. Arguably, this might be a dicey assumption, since catchments of services and utilities seem to depend more on the resources available<sup>61</sup> than on the precise definition of a geographic constituency. The sanitation department aims at a catchment that encompasses the portion of Jalalabad region set out by recent or forthcoming planning instruments (Figure 2), and includes – for instance – large informal settlements lying outside the city core<sup>62</sup>. This approach – which probably is not matched by the actual extension of the waste collection service – rests on a sound rationale. Not only would this suit the reality of solid waste generation in Jalalabad region, but a catchment that stretches beyond the city core and beyond the boundaries of the municipality would be congruent with the area actually invested by waste disposal initiatives, since all the dumpsites to dispose of Jalalabad solid waste are in *Behsud* district, outside the city core and the municipal boundaries.

### 2.1.2. Solid waste collection

Importantly, the load of 400 tons (or the equivalent volume of 800 m<sup>3</sup>) is not the quantity of solid waste actually transported to the dumpsites by municipal trucks after being collected by sanitation department personnel. The figure of 800 m<sup>3</sup> / 400 ton is an estimation of total daily generation attempted in collaboration with the department<sup>63</sup>. According to municipal appraisals only 60% of the waste generated is actually collected and somehow disposed.

Arguably, the estimate of a 60% collection rate may be optimistic. Data from Kabul registered collection efficiency (the ratio between collection and overall generation) of 23% in 2005 (Glawe, Visvanathan, & Alamgir, 2005, p. 5). We cannot discount, though, that municipal administrations

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<sup>58</sup> Data provided for Cambodia in 2005 are higher, and those for Laos PDR are around 0.8 (Glawe, Visvanathan, & Alamgir, 2005). Admittedly, though both Cambodia and Laos PDR are contexts very different from *Nangarhar*.

<sup>59</sup> Eng Abdul Khalil Latify – a leading entrepreneur in Jalalabad business sector – reckoned that the number of construction companies in Jalalabad between 2006 and 2011 had ranged around 400 (interview on 12<sup>th</sup> February 2012). However, Eng Latify reported that this figure had passed to 100 companies or less in 2013. A 75% drop would be consistent with the data provided by the Afghan Builders Association (ABA) in an interview with The New York Times, where ABA executive manager reported a sharp decline from 10,000 to 3,000 countrywide (Nordland & Rahimi, 2012).

<sup>60</sup> Debris from the construction sector

<sup>61</sup> In 2006, researchers from Goupe URD noted that “the limits of the city are constantly changing according to the water supply network, the electricity network and the transport network. Maybe, it is one of reasons that limits are not clear in people’s mind” (Mahmoudi, 2006, p. 7). In a focus group interview at JWSD (Jalalabad Water Supply Department), local officials indicated the intention by the utility to expand towards the satellite towns (*shaharak*) of *Qasim Abad*, *Sheikh Mesri*, *Chamtala* and *Afghan Mena*; they added, though, that an expansion of the catchment is determined by the financial resources available (interview on 19<sup>th</sup> February 2013).

<sup>62</sup> The director of the municipal sanitation department in Jalalabad reported that waste collection occurs – or should – across the entire urban region, including both formal and informal settlements (13<sup>th</sup> February 2013). A similar view – but with reference to water supply and sanitation – was expressed by JWSD officials (19<sup>th</sup> February 2013).

<sup>63</sup> Data on generation, collection and disposal were reviewed in two stages with officials from the sanitation department: a first semi-structured interview on 13<sup>th</sup> February and a follow-up on 28<sup>th</sup> February. Data were collected in m<sup>3</sup>; attempts to discuss in details the ratio volume to weight proved overly complicated and were abandoned. Data on generation (800 m<sup>3</sup>) seem inferred from the quantity collected, which – in turn – seems an estimation from the load actually transported to the dumpsites (500 m<sup>3</sup>).



may have made significant progress across the years in expanding the share of collected waste, also in response to residents' dissatisfaction<sup>64</sup>.

**Table 2.3: Estimated collection efficiency across the years in Kabul, Herat and Jalalabad**

City	Total solid waste generated: ton/day	Collected solid waste: ton/day	Uncollected solid waste: ton/day	Collection efficiency
<b>Kabul (2005)</b>	1,080	250	830	23%
<b>Herat (2011)</b>	326	191 <sup>65</sup>	135	59%
<b>Jalalabad (2013)</b>	400	250	150	62%

Actual collection efficiency would depend on personnel and equipment for solid waste collection and transportation to the dumpsites. Table 2.4 provides an overview of the assets available to the municipal sanitation department.

**Table 2.4: Sanitation department: personnel and assets**

Asset	2010 <sup>66</sup>	2011 <sup>67</sup>	2013 <sup>68</sup>	Comment
<b>Department staff</b>	(135)	314	358	2010 figure not directly relevant: refers to <u>all</u> municipal employees in <i>tashkeel</i>
<b>Loaders</b>	3	2	2	In 2011 a third loader was inventoried as non-functional
<b>Water tankers</b>	1	5	4	2011 figure includes 1 ZiL-130-based water truck
<b>Trucks</b>	(11+12)		26	2013 figure includes 13 large trucks and 13 small
<b>Dump trucks</b>	11			Dump trucks are inventoried as "trucks" in 2013
<b>Flat bed trucks</b>	12			Flat bed trucks are inventoried as "trucks" in 2013
<b>Graders</b>	1	1	(1)	A grader was not reported in 2013, nonetheless should still be counted in the inventory

In the hypothesis of 25 operational trucks every day<sup>69</sup>, with an average payload of 4 cubic meters<sup>70</sup>, 125 trips per day – or 5 trips each truck – would be necessary to transport the collected waste. This performance is evidently unrealistic, in the given conditions and with the given equipment. As a result, the sanitation department hires private vehicles, to expand the fleet required to load, transport and dispose 500 m<sup>3</sup> of collected waste<sup>71</sup>.

Households across the city – and more so in the greater metropolitan region – deal with residential waste discarding it on the street or piling it up in dumpsites improvised beside their homes: this

<sup>64</sup> RAMP-UP, Figure 10 in the 2010 Baseline Survey, reports that 43% of Jalalabad residents deemed poor the waste collection service run by the municipality (RAMP UP East, October 2010).

<sup>65</sup> 171.5 tons / day collected as an average by the municipality, and 19.5 tons / day by a private company (Shaida, 2011, p. 26)

<sup>66</sup> Data from RAMP-UP baseline survey, Tables 3 and 22 (RAMP UP East, October 2010)

<sup>67</sup> Data from ASGP capacity development plan (Afghanistan Sub-National Governance Programme, 2011)

<sup>68</sup> Data from interviews at sanitation department on 13<sup>th</sup> February and 28<sup>th</sup> February

<sup>69</sup> The assumption that only 1 truck / day needs maintenance may be optimistic

<sup>70</sup> Small trucks may carry less than 4 m<sup>3</sup>, and it is unlikely that all the trips are full load

<sup>71</sup> Interview with the head of the sanitation department, Mr Barialay, on 13<sup>th</sup> February 2013: it should be noted that truck hire may amount to a significant dent in the municipal budget, while in various contexts financial monitoring of these costs has proved complex.



practice, which appears followed by a majority of the urban dwellers (90% in 2010<sup>72</sup>), impinges obviously on public health standards in the city. Lack of public containers<sup>73</sup>, where households can eliminate residential waste from the homes and where municipal services can upload it to a truck, further complicates the collection process.

In such a situation, unplanned and hazardous dumpsites become the haphazard transfer stations<sup>74</sup> of a non-existing waste management system. Solid waste is reported to remain for extended periods in those hazardous spaces within or around a settlement: in 2010, 80% of the sampled households reported a collection frequency of a month or more<sup>75</sup>. Albeit a slight improvement may have occurred, yet in 2012 the situation remained worrisome, with collection in informal settlements occurring at monthly intervals in 53% of the cases, and even less frequently in 9% of the areas<sup>76</sup>.

In a difficult – even threatening – context, various forms of *ashar*<sup>77</sup>, or collective community labour, seem to have developed in a few neighborhoods, where people are presently contributing in kind to the delivery of waste collection service<sup>78</sup> and organizing for private garbage collection<sup>79</sup>.

### 2.1.3. Solid waste disposal

Collection is certainly problematic but it is just a part of a broader challenge. The absence of a waste management plan<sup>80</sup> that could integrate waste prevention, collection, recycling and disposal<sup>81</sup> is definitely daunting, as it jeopardizes directly public health and threatens vital resources for Jalalabad metropolitan region, primarily: its groundwater<sup>82</sup>, the Kabul River<sup>83</sup> and the river banks<sup>84</sup>.

The city and its region have no sanitary landfill, or other safe waste disposal facility. In a largely urbanized valley, where a million people live, the threat from this situation is immediate and serious.

The course of action currently privileged relies on a shifting system of dumpsites, where agricultural land - mostly in Behsud district - is turned into open dumps with no bottom liner, run-off collection system or cap upon closure. Open dumps are filled to the brim<sup>85</sup> and then basically abandoned (see Photos 2.1 and 2.2 from *Tameerat* dumpsite once filled) to shift to the following ground.

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<sup>72</sup> As to RUMP-UP survey, 60% of the residents dispose of their waste in the street and 30% in improvised dumpsites (RAMP UP East, October 2010)

<sup>73</sup> 1% of RAMP-UP survey sample was eliminating residential waste in public containers

<sup>74</sup> A transfer station is a facility of an integrated waste management system "at which municipal solid waste is consolidated into loads that are transported by larger trucks to distant disposal sites" (United Nations Environment Programme, December 2005, Appendix A). Of course, a haphazard dumpsite should not replace a transfer station.

<sup>75</sup> RAMP-UP survey indicated that 81% of the households lived in area visited by waste collection services once a month or less (RAMP UP East, October 2010)

<sup>76</sup> Daily collection was reported only in 5% of the informal settlements (Peace Humanitarian Organization, 30 April 2012, p. 64). In a more optimistic vein, we may note that in 2012 the catchment for waste collection included – or more precisely did not exclude - informal areas within and around the city core, even if the quality of the service is inadequate.

<sup>77</sup> Schütte indicates that *ashar* is particularly widespread in emerging new settlements of Jalalabad (Schütte, 2006, p. 16)

<sup>78</sup> 50% of the waste collection service would depend upon contribution in kind from Jalalabad residents (Afghanistan Sub-National Governance Programme, 2011, p. 13)

<sup>79</sup> 41% of the sampled residents in informal settlements in 2012 (Peace Humanitarian Organization, 30 April 2012, p. 63)

<sup>80</sup> Its absence was highlighted by the head of Jalalabad sanitation department (interview on 13<sup>th</sup> February 2013).

<sup>81</sup> Glawe et al in the presentation slides annexed to their paper indicate the following components of integrated solid waste management: data collection on waste generation; data collection on waste composition and characteristics; waste reduction, reuse and recycle; public and community participation; NGO's and CBO's involvement; waste separation; waste collection; waste transport; and waste treatment and disposal (Glawe, Visvanathan, & Alamgir, 2005).

<sup>82</sup> Because of contamination caused by heavy metals, chemicals and microbial life carried by the leachate that filters through open dumps, with no liners or leachate collection systems

<sup>83</sup> Because of run-offs towards Kabul River - or other surface water basins - from dumpsites realized within floodplains

<sup>84</sup> Because of inappropriate waste disposal that may lead to floods, especially in the floodplains and along the banks of Kabul River

<sup>85</sup> Normally just a perimeter wall built around the fields used as open dump

While the earliest sites lay inside the metropolitan core – *Tawheed Abad* in Campoona (Photos 2.3 and 2.4), *Abdul Haq Park*<sup>86</sup>, both in *nahia* 1 – the new open dumps lie in *Behsud* district, to the northeast of *nahia* 1. Worryingly, the most recent sites are just beside Kabul River, with no buffer zone to separate them from the stream, increasing the risk of surface water contamination from the runoffs of the open dumps; lying on the floodplains of Kabul River, these large expanses of unstable and polluted soil may become a threat for both the adjacent communities and those downstream. Reportedly<sup>87</sup>, the very selection of *Tameerat* took place after a flood that affected the site and damaged a few fields. To raise their fields over the nearby river - and possibly with a view to reclaiming some wetland - local farm-owners and municipal officials concluded an agreement by which the flooded fields along the river bank would turn into a dumping ground until full capacity is reached. The agreement did not envisage any lining in clay, plastic or otherwise at the bottom; no soil was excavated, or buffer area established. No plan was seemingly made for an engineered system to keep leachate<sup>88</sup> from percolating through the ground and reaching the ground water. Likewise, the issue of contaminated run-offs straight to Kabul River was not ostensibly considered. Actually, the only construction that comes across as a protective measure is a flood protection barrier (Photo 2.5 and 2.6) assembled - presumably by the residents themselves - in front of the fields now converted into dumping ground.

The fields of *Tameerat* that were transformed in dumping ground cover an area 200 meters wide and 100 meters long, for a total of roughly 20,000 square meters<sup>89</sup>. Its capacity was determined ex-post, considering that it took 4 months, or about 120 days, to fill it up: from November 2012 up to February 2013. At an average of ca. 500m<sup>3</sup> a day this means an approximate capacity of 60,000 m<sup>3</sup> (somewhere around 30,000 tons of solid waste).

Risks are evident. Without insulating layers at the bottom of the dump, leachate - whose content and toxicity would depend on the types of waste streams lumped in the site, which are unknown - is expected to percolate and reach the water table. Water contamination might likely affect *Tameerat* residents and the communities downstream. Furthermore, as the elevated grounds rest on unstable soil, the potential risk from flooding may be worse than before. The location in *Tameerat* may possibly have the only advantage of easy access, as dump trucks could transport the solid waste day and night across *Behsud* bridge and then along the regional artery towards *Kunar* (Photo 2.7).

As *Tameerat* capacity was rapidly exhausted, the shifting disposal system forced by Jalalabad waste crisis moved further east, to the village of *Zangoye* (or *Zangobay*). The new site, still on Kabul River floodplain, lies on the southern bank. *Zangoye* has a 300-meter front on the river bank and a depth of approximately 50 meters, for a total approximate surface of 15,000 m<sup>2</sup> (Photos 2.8 and 2.9). Residents built a perimeter wall, estimated 2.5 meters high (Photo 2.10), in fact the only precautionary measure taken before initiating the dumping ground. No excavation or insulation was possible, as the sanitation department – literally haunted by galloping waste generation in the city – had not time or resources to engage in any site preparation. As in the case of *Tameerat*, relatively reliable data on the actual capacity of the site will come about after completion. However, the estimation is in the range of 50,000 cubic meters, or a 100 day life span. The site in *Zangoye* might reach full capacity by early June 2013, while where to shift next is still undecided.

Around *Tameerat* there might be some more space, for about 15,000 m<sup>3</sup>, to wit: 30 days more or less. Alternatively, an artificial basin intended for a fish farm was identified<sup>90</sup> close to the current dumping

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<sup>86</sup> *Abdul Haq* was discontinued in 2011 (interview with sanitation department official, 28<sup>th</sup> February 2013), while *Tawheed Abad* seems to have stayed operational longer. In the account offered by DUDA officials (16<sup>th</sup> February 2013), the area in Campoona has taken solid waste up to date. *Tawheed Abad* became a residential gozar in 2012, as the wetlands reclaimed through the open dump were settled: the area is extremely unstable, its land is partially saturated with water, and excavation deeper than 2 meters is impossible across the entire gozar as the water table is very high.

<sup>87</sup> A site visit was conducted in *Tameerat* by a USAID LARA engineer in September 2012

<sup>88</sup> Liquid that is produced after water comes in contact with waste (United Nations Environment Programme, December 2005)

<sup>89</sup> Field visit in September 2012 and interviews with sanitation department in February 2013

<sup>90</sup> Interview at Jalalabad sanitation department on 13<sup>th</sup> February and follow-up on 28<sup>th</sup> February

ground in *Zangoye*. This basin has an approximate surface of 10,000m<sup>2</sup> and a 2-meter depth. Hence, the reservoir – should it be assigned for waste disposal - might be able to take solid waste for about 40 days.

The shifting waste disposal system forced by the crisis is inevitably restricted to a very short-term planning horizon dictated by the pressure to find a place for the 250 tons or so (Table 2.3) the municipality collects daily and cannot but dispose somewhere. Daily emergency and ensuing short-term view bring about a distinct local governance frailty of the system: a solution to waste generation at metropolitan level demands a multi-stakeholder approach, where at least district governors, DAIL<sup>91</sup>, DUDA<sup>92</sup>, and provincial governor undertake coordinated steps with Jalalabad municipality; instead, the daily pressure drives the municipality – if not the sanitation department alone – to adopt individual, extemporary measures, bilaterally negotiated<sup>93</sup> with landowners ready to lease some agricultural land for an open dump. The lack of any coordination with district authorities (*Behsud* in particular) is, for instance, perplexing.

This system of waste disposal is prone to multiple risks in term of calamities and water contamination (Figure 3).

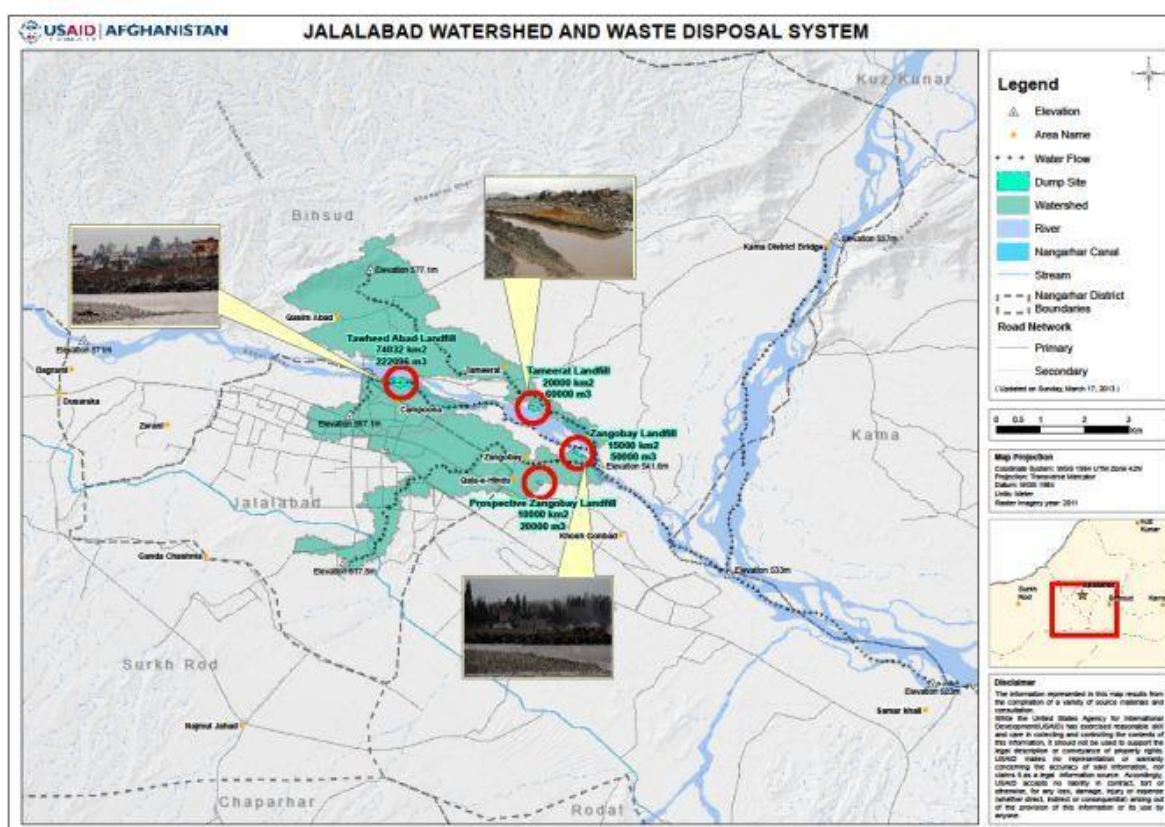
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<sup>91</sup> Provincial Department of Agriculture Irrigation and Livestock

<sup>92</sup> Department of Urban Development

<sup>93</sup> The waste disposal sector offers important opportunities for public/private partnerships (PPPs). With specific reference to landfills, their operations are generally clustered in three categories: publicly owned and operated, publicly owned and privately operated, and privately owned and operated. None of those categories – however – corresponds to the situation in Jalalabad metropolitan region, where privately owned dumps are publicly operated by the municipality. This is light-years away from the very idea of PPPs where private expertise and corporate capitals are sourced within effective regulatory frameworks. Neither expertise nor capitals are sought by the ongoing arrangements in Jalalabad metropolitan region, and no public regulatory framework is discernible.

**Figure 3: Waste disposal arrangements in Jalalabad watershed**



The mere thought of limiting or holding back waste collection in absence of appropriate disposal facilities is hardly conceivable<sup>94</sup> and would certainly engender little support among the dwellers of the metropolitan area<sup>95</sup>. A few steps, however, should be immediately considered<sup>96</sup>.

With respect to the disposal system, two at least are the necessary conditions and minimum requirements: the introduction of measures to line the bottom of landfills and prevent leachate from reaching the groundwater; and the location of waste disposal facilities outside the floodplains of Kabul River.

As to the governance mechanisms, the ongoing waste crisis and the lack of a waste management system should rise to the level of priority and enter the main agenda of key stakeholders at metropolitan level –Jalalabad municipality, provincial governor, DUDA, DAIL and district administrations, at least – and national as well (MUDA, GDMA, MAIL, NEPA<sup>97</sup> at least<sup>98</sup>).

In terms of planning instruments, the waste crisis demands a metropolitan approach, where plans and regulations assume the city region dimension of waste generation and disposal. Planning instruments should take in the real size of Jalalabad footprint (see Figure 2): a 488 km<sup>2</sup> metropolitan region set

<sup>94</sup> DuVivier reports that in the past "aid agencies and non-governmental organizations" denied requests to expand waste collection "because they have no sanitary landfill built to American standards to receive the waste" (DuVivier, July 2005, p. 24), but he argues against that approach.

<sup>95</sup> RAMP-UP survey (Figure 7) highlights that the highest rates of satisfaction among disposal methods are met by landfills – either municipal (53%) or improvised (44%) – or by outdoor burning of the waste (44%). There is no evidence of any concern about environmental impact of waste disposal (RAMP UP East, October 2010)

<sup>96</sup> It is worth noticing that in accordance with its agreed work-plan, USAID/LARA could not "develop new municipal landfills or solid waste transfer stations" (Land Reform in Afghanistan Project, April 2012, p. 7).

<sup>97</sup> National Environment Protection Agency

<sup>98</sup> In fact, the involvement of more agencies would be probably appropriate: ANDMA (Afghanistan National Disaster Management Authority) for example

over the 80-mile valley of Kabul River<sup>99</sup>. Finally, strategic planning choices cannot be grounded in anecdotic information; policies to address metropolitan challenges, such as the current waste emergency, must depend on accurate data, which are still desperately missing on solid waste and waste streams.

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<sup>99</sup> See, for instance, Hanifi, December 15, 2008



**Figure 2: 1 *Tameerat* dumpsite upon its closure (28 February 2013)**



**Figure 2: 2 *Tameerat* dumpsite upon its closure (28 February 2013)**



**Figure 2 . 3 *Tawheed Abad* rises over a dumpsite in the floodplain of Kabul River**



**Figure 2 . 4 Abandoned dumpsite over the river bank of *Tawheed Abad***



**Figure 2 . 5 *Tameerat*: flood protection measures**





**Figure 2 . 6 *Tameerat* flood protection barrier**



**Figure 2 . 7 *Tameerat*: trucks around the open dump**



**Figure 2 . 8 *Zangoye*: beginning of the operations**





**Figure 2 . 9 Zangoye: first truckloads on Kabul River floodplain**



**Figure 2: 10 Zangoye: perimeter wall**



## 2.2. Urbanization and Water Resources

### 2.2.1. Urban water supply

Municipal oversight of urban water supply traces back to 1973, when a municipal unit was established for the purpose<sup>100</sup>. Ten years later or so, around 1983, the unit grew into a provincial department in charge of water supply<sup>101</sup>. From the fall the Afghan Emirate until 2009, at national level the provincial water departments had to refer to a state owned enterprise, the Central Authority for Water Supply and Sewerage (CAWSS). With CAWSS dissolution in 2009<sup>102</sup> and the establishment of the Afghanistan Urban Water Supply and Sewerage Corporation (AUWSSC), provincial water departments were progressively transferred to the new water entity. AUWSSC, which took over urban water supply and sewerage<sup>103</sup> operations in the country since October 2010, is organized in Strategic Business Units (SBUs)<sup>104</sup>. In 2010, with support from USAID's CAWSA project, JWSD became one of the first provincial departments to join AUWSSC<sup>105</sup>. JWSD is the most significant local stakeholder for the management of urban water across the entire metropolitan region.

Jalalabad residents attain their drinking water mostly by sources different from piped household connections (Tables 2.5 and 2.6), the highest<sup>106</sup> level in the JMP<sup>107</sup> "drinking water ladder"<sup>108</sup>. The scant data available have to be taken with caution, and a breakdown of Jalalabad households by drinking water sources may perhaps suggest the rank of the sources according to their relative importance instead of a precise distribution of the population.

Relying on the figures on piped connections into dwellings<sup>109</sup>, on two surveys<sup>110</sup>, and on qualitative information<sup>111</sup>, we may propose – in a tentative fashion - the ranking orders of Tables 2.5 and 2.6 for the relative frequency of access to water sources in the metropolitan core (as outlined in Chapter 1, Figure 1) and in the broader metropolitan region (Chapter 1, Figure 2).

**Table 2.5:** *Drinking sources ranked from most to least accessed in the metropolitan core*

Water source	Rank	Survey (2012) <sup>112</sup>	Survey (2010) <sup>113</sup>	Definition <sup>114</sup>
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<sup>100</sup> Interview with Eng Abdul Shukor, Jalalabad Water Supply Department, 19<sup>th</sup> February 2013

<sup>101</sup> Interestingly, the relative disengagement of the municipality from urban water supply seems to have happened earlier than the establishment of AUWSSC and the formation of its business units. Before AUWSSC, the provincial departments of water might have reported essentially to the Provincial Governor: it's this reporting line – more than a more tenuous connection with the Municipal Mayor – which was partially replaced by the new AUWSSC/SBUs structure (focus group interviews with JWSD officials on 19<sup>th</sup> February 2013).

<sup>102</sup> See: USAID Afghanistan, December 2010

<sup>103</sup> While AUWSSC mandate includes explicitly urban waste water and sewage disposal, the SBUs gladly delegate this responsibility to other local actors, albeit imprecisely defined. The Jalalabad Water Supply Department – from its very name – is no exception.

<sup>104</sup> By November 2010, the World Bank reports that six strategic business units had joined AUWSSC: "heads of the six strategic business units (SBUs) of the AUWSSC have come on board" (Deepali, 4 November 2012).

<sup>105</sup> Along with Mazar-e-Sharif, Ghazni, and Gardez (USAID Afghanistan, December 2010)

<sup>106</sup> Not necessarily the safest, though, as 42% of the cases of dysentery, cholera and severe diarrhea identified by RAMP-UP in 2010 (Figure 12) were associated with "government supplied piped water at home" (RAMP UP East, October 2010)

<sup>107</sup> WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation

<sup>108</sup> JMP Water Ladder distinguishes water sources categories between unimproved and improved. The latter are clustered in different "rungs" from piped household connections – the most complex source to set up - to public taps or standpipes, tubewells or boreholes, protected dug wells, protected springs until rainwater when safely collected (WHO / UNICEF, 2010).

<sup>109</sup> Interview with Mr Merzajan Hemat at JWSD (19<sup>th</sup> February 2013)

<sup>110</sup> One conducted by RAMP-UP in 2010 (RAMP UP East, October 2010) and the other by LARA in 2012 (Peace Humanitarian Organization, 30 April 2012)

<sup>111</sup> Focus group discussions conducted with community leaders, wakil-e-gozar' s and property dealers from various area of the metropolitan region between 11<sup>th</sup> and 19<sup>th</sup> February 2013.

<sup>112</sup> Socio-Economic & Housing Baseline Survey in Selected Settlements in Jalalabad, 30 April 2012

<b>Tube-wells boreholes</b>	<b>or</b>	<b>I</b>	41%	72% <sup>115</sup>	Deep hole that has been driven, bored or drilled to reach groundwater. Boreholes / tube wells are constructed with casing, or pipes, which prevent the small diameter hole from caving in and protect the water source from infiltration by run-off water. Water is delivered through a pump, which may be powered by human, animal, wind, electric, diesel or solar means
<b>pipd household connections</b>		<b>II</b>	21% <sup>116</sup>	28% <sup>117</sup>	Piped water connection to one or more taps in a house, yard or plot
<b>protected wells</b>	<b>dug</b>	<b>III</b>	14%	<i>Note 69</i>	Dug well protected from runoff water by a well lining or casing that is raised above ground level and a platform that diverts spilled water away from the well. It is covered, so that bird droppings and animals cannot fall into the well.
<b>unprotected well</b>	<b>dug</b>	<b>IV</b>	13%	<i>Note 69</i>	Either a well that is not protected from runoff water, or a well that is not protected from bird droppings and animals  This is not a source of safe drinking water
<b>public standpipes</b>	<b>taps or</b>	<b>V</b>	10%	28%	Public water point from which people can collect water: public standpipes can have one or more taps
<b>protected spring</b>		<b>VI</b>	1%		Spring protected from runoff, bird droppings and animals by a "spring box", constructed of brick, masonry, or concrete and built around the spring so that water flows directly out of the box

**Table 2.5** indicates that at the most one household out of five in the city core relies – sporadically – on piped water into their dwelling, while the vast majority depends on wells – some unprotected – to procure their drinking water.

In the greater Jalalabad region, where JWSD pipeline network comprises a small fraction of the metropolitan territory, the relative relevance of piped water is expected to decrease further<sup>118</sup> (Table 2.6).

<sup>113</sup> Municipal Baseline Survey Report: Jalalabad City, October 2010

<sup>114</sup> Based on JMP Water Ladder (WHO / UNICEF , 2010)

<sup>115</sup> The figure includes both protected and unprotected sources, as it aggregates any type of well: tube well, protected dug well and unprotected dug well.

<sup>116</sup> This figure and the figure from the 2010 survey seem an overestimate, which might depend on the sampling method. Considering a number of 55,000 households in the metropolitan core – Chapter 1 Section 1.1, p. 3 – 9,000 connections, which is the figure provided by JWSD, would represent 16% of the catchment population. Furthermore, actual access is likely much lower than the number of connections.

<sup>117</sup> The very high estimate may also originate from a number of households that rely on a well as primary water source and sporadically on piped water from the municipal network, as water supply from the latter source is less dependable as lack of electric power may prevent its utilization. This would explain why the 2010 survey yield a total of 106%.

<sup>118</sup> Assuming a population of approximately a million- or about 160,000 households - 9000 connections would make up no more than 6% of the potential users.

**Table 2.6:** *Drinking sources ranked from most to least accessed in the metropolitan region*

Water source	Rank: metropolitan region	Rank: metropolitan core
Tube-wells or boreholes	I	I
protected dug wells	II	III
unprotected dug well	III	IV
public taps or standpipes	IV	V
pipelined household connections	V	II
protected spring	VI	VI

Although qualitative information seems to confirm the predominant position of boreholes and tube-wells, other sources - particularly the unimproved ones<sup>119</sup> - are likely to play a more significant role if we turn to the greater Jalalabad region. Data are inadequate even to rate them by relative importance, but a few unimproved sources need accurate study and data gathering. Likely, unprotected dug wells account for a larger share as we move to the metropolitan scale, which may be the case for surface water too. Actually, the consumption of water from rivers, streams and canals should be carefully investigated: in a context where contamination threats from run-offs appear substantial, if Jalalabad households included surface sources in their strategies on drinking water this would significantly worsen the public health situation.

JWSD scheme to extract and store groundwater depends on the sources and storage arrangements outlined in Table 2.7<sup>120</sup> and Figure 4.

**Table 2.7:** *JWSD assets and facilities for groundwater extraction and storage*

Function	Unit	Number of units	Location
<b>Groundwater extraction</b>	Tube-well: liters/sec	32 11	All <i>nahias</i> in Jalalabad metropolitan core
	Tube-well: liters/sec	12 2	<i>Nahia</i> 6
	<i>Karez</i> <sup>121</sup>	2	•Moqam Khan •Shamard Khan
<b>Water storage</b>	Reservoir: 1,000 m <sup>3</sup>	3	<i>Nahia</i> 2: JWSD premises
	Reservoir: 2,500 m <sup>3</sup>	2	<i>Surkh Rod</i> : Ganda Chashma
	Reservoir: 450 m <sup>3</sup>	1	<i>Nahia</i> 4: Majbur Abad
	Reservoir: 150 m <sup>3</sup>	2	<i>Nahia</i> 6

While most of the extraction capacity of the department is in the city core, and all the tube-wells are within the municipal boundaries<sup>122</sup>, the largest water storage facilities lie in *Surkh Rod* district, south of *nahia* 5.

<sup>119</sup> JMSP identifies these unimproved drinking water sources: unprotected springs, unprotected dug wells carts with small tank/drum, tanker-trucks, surface water, and bottled water (WHO / UNICEF , 2010).

<sup>120</sup> Interview with the technical director of JWSD, Mahtab Gul Shigewal (3<sup>rd</sup> March 2013)

<sup>121</sup> "With origins dating back several millennia, karez extracts shallow groundwater by means of subsurface tunnels and canals to gravity-feed water to recipient communities and command areas" (Rout, June 2008)

The water storage capacity available to JWSD sums up to only 8,750m<sup>3</sup> (8.75 million liters). Such a capacity appears inadequate to ensure standard water requirements for Jalalabad urban population, even the fraction of urban residents who are settled in the metropolitan core.

The minimum “survival” allocation is deemed to be 7 liters per capita per day (lpcd)<sup>123</sup>. As the population in the metropolitan core is at least 215,000, the total “survival” water allocation would require 1.5 million litres a day. With the given water storage capacity of 8.75 million liters – even in the very unlikely hypothesis that all the reservoirs are at full capacity – Jalalabad residents have no more than 6 days of water, at a survival rate. If instead of the mere survival rate – namely the minimum water consumption for cooking and drinking – WHO “medium term allocation” were considered, including personal hygiene and laundry requirements<sup>124</sup>, every resident would need between 15 and 20 lpcd. In this second scenario, Jalalabad water storage capacity would be sufficient for 2 ½ days<sup>125</sup>. At any rate, the storage capacity presented in Table 2.8 seems insufficient<sup>126</sup> to ensure city resilience in case of environmental crises even of moderate intensity, especially in a context where droughts cannot be excluded.

**Table 2.8: Storage capacity and city resilience**

<b>Total storage capacity – theoretical<sup>127</sup></b>	8,750 m <sup>3</sup>	8,750,000 litres
<b>Litres / resident in the 5 central <i>nahias</i></b>		41 litres
<b>Litres per capital per day / lpcd (WHO estimate)</b>	survival allocation	7 litres
	medium term allocation	15 litres
<b>City resilience in days</b>	days / survival rate	5.86
	days / medium term	2.7

Within the city central districts, pipelines and piped water reach a maximum of one resident’s home out of five. But even those who are actually connected to the JWSD grid seem to count mainly on alternative sources – generally wells – owing to the unpredictable schedule, frequent interruptions and short intervals of actual piped water supply<sup>128</sup>. Apparently, however, the supply of piped water through household connections lies at the very heart of JWSD mission; at least in the way mission and priorities are understood by the department senior staff. Whether an exclusive focus on household

<sup>122</sup> *Nahia* 6, although located outside the metropolitan core and within the boundaries of *Surkh Rod* district is an officially sanctioned district of Jalalabad municipality.

<sup>123</sup> WHO Regional Office for South-East Asia considers a survival allocation of 7 Lpcd: 3-4 Lpcd for drinking and 2-3 Lpcd for food preparation (Minimum water quantity needed for domestic uses, 2005). WHO indicates that such allocation is sustainable for few days only.

<sup>124</sup> WHO Regional Office for South-East Asia identifies three levels of individual water consumption: “short term – survival”, “medium term – maintaining”, and “long term – lasting solution” (Reed, 2005)

<sup>125</sup> In 2005, DuVivier (July 2005, p. 13) estimated a city-wide demand of 4.5 million liters a day, far higher than the survival or medium-term allocation. It is worth mentioning, though, that even an allocation between 15 and 20 lpcd is deemed sustainable only for a few months, as even the medium term allocation would not cover consumption of water for a few key household functions, such as the cleaning of the home or basic sanitation (Reed, 2005, p. 3).

<sup>126</sup> The paper by Nangarhar Inc. highlights the inadequacy even more, as it compares the water storage and distribution system to the needs from the greater Jalalabad region, with a population of a million residents. The weakness of the system is not circumscribed to the water distribution dimension – the pipelines – but extends to insufficient storage capacity (Nangarhar Inc., 2008, p. 53)

<sup>127</sup> With all reservoirs at full capacity

<sup>128</sup> Female residents are often ready to offer detailed information about water sources and water supply, possibly because of the reproductive labor they are mostly tasked with. This includes the “many activities which are carried out to maintain a household and to reproduce its labor force. Such activities range from childbearing and child-rearing to cooking, washing, cleaning and repair work to firewood collection, scavenging the streets for burnable materials and carrying drinking water to the house” (Schütte, 2006, p. 14). Kubra, the chairperson of the female CDC in gozar *Masjid Kacha Galay*, indicated that women in *nahia* 3 reckon on wells for their work: when wells are powered by electric pumps, they have to wait for the electricity to collect water and must be ready at any time of the day or the night (interview on 19<sup>th</sup> February 2013). Even where piped connections are present – as in the case of *Sahati Ama* in *nahia* 3 – residents must get their water also from wells, either in the homes or in public spaces (interview on 14<sup>th</sup> February 2013 with Mohammad Asham, property dealer).

connections is justified, or instead – in the context of Jalalabad - more institutional energy should be spent to procure safe water to the entire population<sup>129</sup>, for instance by improved monitoring of water quality from public standpipes, dug wells and boreholes<sup>130</sup>, is open to discussion.

The blueprint of municipal pipelines was drawn to serve the five *nahias* of Jalalabad core<sup>131</sup>. To the north, it stretches to *Campoona*, whose gozar's of *Awal*, *Naw Abad* and *Tawheed Abad* sit on the banks of Kabul River. To the south, the network reaches *Farm-e-Hada* Bridge. The eastern end of the water grid is in the vicinity of the settlements of *Qasaba* and *Qala-e-Hindu*<sup>132</sup>, both in *nahia* 1. The area of *Sahati Ama* in *nahia* 3 is the farthest point to the west, as JWSD pipelines extend till *Jandarma* Bridge, where the highway to Kabul crosses the *Kambo Khwar*<sup>133</sup> immediately after the NDS headquarters<sup>134</sup> (Figure 4). The entire network extends for about 170 kilometers<sup>135</sup> (Table 2.9). But even inside the 19 km<sup>2</sup> occupied by the central districts the water supply system shows gaps so significant that it covers just 18% of the service area<sup>136</sup> (Osborn, 16 December, 2010). Seemingly, the overall water supply network in Jalalabad has not expanded significantly in the last seven years<sup>137</sup>.

Not only is the breadth of the distribution system insufficient to supply water to the metropolitan core, and more so to the greater Jalalabad region; most pipelines need repairing or replacing as well. Leakages – which result in losses up to 40% of the system capacity across Afghan cities<sup>138</sup> – are allegedly massive also in Jalalabad. In 2008, 145 kilometers of existing pipes were regarded as defective or damaged<sup>139</sup>. JWSD noted<sup>140</sup> that in several zones of the city core asbestos cement (AC) mains and polyvinyl chloride (PVC) pipes are in poor conditions and prone to leak: for instance, *Joy Haft* (*nahia* 5) is a settlement where the water grid is particularly worn out, as it was laid long ago.

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<sup>129</sup> WHO states that “access to drinking water means that the source is less than 1 kilometer away from its place of use and that it is possible to reliably obtain at least 20 litres per member of a household per day” (World Health Organization, 2013). Access to safe drinking water can be achieved through a portfolio of options where household connections are not necessarily the most important.

<sup>130</sup> Whether the priority assigned to household connections is driven by donors' agendas or is an independent strategy by the department is not immediately clear. As a matter of fact, JWSD technical director commented that once they had monitoring capabilities – e.g. testing equipment – which they have no more, as analyses of water quality can only be conducted in the laboratory of the provincial department of health (interview with Mahtab Gul Shigewal, 3<sup>rd</sup> March 2013)

<sup>131</sup> JWSD officials maintained that the coverage of the central *nahia* is the highest current priority (focus group discussion at JWSD on 19<sup>th</sup> February 2013)

<sup>132</sup> *Qala-e-Hindu* is just about a kilometer to the south-west of *Zangobay* (or *Zangoye*), where the dumpsite opened in March 2013 lies.

<sup>133</sup> *Khwar* is an intermittent stream

<sup>134</sup> The main office of the National Directorate of Security (*Qumandani Amniyat*) is the last public facility reached by JWSD pipelines to the northwest.

<sup>135</sup> The figure comes from the technical director of JWSD (3<sup>rd</sup> March 2013). However, a field survey conducted by USAID LARA late in 2012 identified only 154.04 km of pipelines.

<sup>136</sup> Jamila, who leads a women's CDC in gozar *Baboryan* (*nahia* 3), reported that households there depend exclusively on wells, as pipelines have not reached the area (interview on 19<sup>th</sup> February). In fact (Figure 4), pipelines were laid at least in the lower portion of the settlement: the statement by the woman leader may refer to the actual reliance on the existing AC mains.

<sup>137</sup> In an effort to mark the city boundaries, URD suggested that “the limits of the city correspond to the limits of the water supply network” which in 2006 were basically the same as those outlined by JWSD technical director seven years later: NDS headquarters to northwest; *Beshud* Bridge to the North; *Farm-e-Hada* on the south, and *Qasaba* on the east (Mahmoudi, 2006, p. 48).

<sup>138</sup> GIZ Office Kabul, December 2011

<sup>139</sup> *Nangarhar* Inc. estimated that 145 kilometers of pipelines should be replaced or repaired (Nangarhar Inc., 2008, p. 53)

<sup>140</sup> JWSD technical director (3<sup>rd</sup> March 2013)



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# JALALABAD WATER SUPPLY SYSTEM

**Legend**

- Tunnel
- Area Name
- Contaminated Wells
- Chemical Pathogenic Contamination
- Pathogenic Contamination
- Contaminated Waterline
- Water Supply Network
  - Planned Pipelines
  - Existing HD and PVC Pipe
  - Existing AC Pipe
- Reservoir
- Jettied Roads
- Main Road
- Secondary Road
- River
- Nangarhar Canal
- Obdam
- District (Phases)
- Nangarhar District
- District

**Map Projection**

Coordinate System: WGS 1984 UTM Zone 49N  
 Projection: Transverse Mercator  
 Datum: WGS 1984  
 Units: Meter  
 Representative Scale: 1:100,000

**Disclaimer**

The information represented in this map results from the compilation of a variety of source materials and consultation with the United States Agency for International Development (USAID). USAID does not warrant, represent, or guarantee the accuracy of the information. USAID accepts no liability in contract, tort, or otherwise, for any loss, damage, injury, or expense, whether direct, indirect, or consequential, arising out of the provision of this information or its use by anyone.

The accelerated dynamics of Jalalabad urbanization compel key service providers to react in response to fresh emergencies that incessantly crop up, denying the chance to pursue long-term strategies<sup>145</sup>. Thus, JWSD prioritized household connections in *nahia* 5 out of the crisis precipitated by the rapid decline of the water quality from its wells<sup>146</sup>: *nahia* 5 holds now the relative majority of JWSD connections. Widespread complaints on the water from both dug wells and tube-wells led in the past years to extra efforts to connect households living in the fifth urban district to the city mains. However, insofar as the pipe network in *nahia* 5 is particularly run-down<sup>147</sup>, JWSD effort might be vain.

<sup>147</sup> As noted above about Joy Haft

JWSD strives to extend piped household connections to as many residents as possible at least within the metropolitan core. In its pursuit, the distinction between informally developed areas and planned sections of the city is of little consequence to the water department. Insofar as the installation costs are the decisive factor, whereas JWSD does not register a differential cost between connections in informal and formal settlements, the department sees no reason to discriminate against customers from informal areas. On the contrary: with a tariff strategy that seems to favor informal residents<sup>148</sup>, JWSD looks bent on attracting users from informal settlements. Early in 2013, approximately 25% of the existing connections – slightly more than 2,200 - were installed at residents' homes in informal areas<sup>149</sup>.

**Table 2.9: Pipeline network in the central districts of Jalalabad**

Water network (JWSD): km	Water network (LARA): km	Pipelines in need of repair: km	% defective pipes (2008)	Service area coverage
170 <sup>150</sup>	154.04 <sup>151</sup>	145 <sup>152</sup>	85% (94%) <sup>153</sup>	18% <sup>154</sup>
<b>JWSD connections (approx.)</b>		In planned areas (approx.)	In informal settlements (approx.)	
<b>9,000</b>		<b>7,750</b>	<b>2,250</b>	

The five central *nahias* take precedence in JWSD drive to build up the water supply network, prioritizing those urban areas where water crises have broken out, especially in terms of pathogen contamination<sup>155</sup>. The next order of priority seems to be the satellite towns (*shaharak*) of the metropolitan constellation around the original city core<sup>156</sup>. It results evident that JWSD has not the resources to realise water supply networks in the *shaharak*'s dotting the metropolitan region. However, the intention to intervene in settlements such as *Qasim Abad* and *Afghan Mena* in *Behsud* district, *Sheikh Mesri* in *Surkh Rod*, or in areas as far as *Chamtala* in *Khogyani*<sup>157</sup> highlights efforts by the department to construe itself as watershed-level agency. Since a watershed approach to water supply responds to the environmental challenge JWSD is facing, this interpretation of its own role as metropolitan service provider is positive news. Possibly, the well-resourced "private city" of *Ghazi Amanullah Khan* contributes to the appeal for JWSD of a metropolitan vision of its functions and catchment.

<sup>148</sup> See below

<sup>149</sup> Interview with Merzajan Hemat at JWSD (19<sup>th</sup> February 2013). It is worth mentioning that JWSD definition of informal urban settlement might not entirely coincide with those from the municipal administration or MUDA.

<sup>150</sup> Figure obtained from the technical director of JWSD (3<sup>rd</sup> March 2013)

<sup>151</sup> Survey of existing pipelines conducted by USAID LARA in the last quarter of 2012: the discrepancy between this figure and the pipeline network extent estimated by JWSD can be explained - perhaps - by the inclusion of planned pipelines in the department estimate

<sup>152</sup> Nangarhar Inc., 2008, p. 53

<sup>153</sup> The percentage in brackets is based on USAID LARA survey of existing pipelines late in 2012

<sup>154</sup> Figure presented by CAWSA at the USAID Infrastructure and Engineering Conference (16 December, 2010)

<sup>155</sup> A participant in the focus group discussion at JWSD on 19<sup>th</sup> February 2013 put it in clear terms: "the water from dug wells in Joy Haft is not potable, and tube wells would not provide drinkable water either... that's why JWSD must give precedence to that area".

<sup>156</sup> Officials from JWSD mentioned four townships, more as examples than precisely defined targets: *Qasim Abad*, *Afghan Mena*, *Sheikh Mesri* and *Chamtala* (focus group on 19<sup>th</sup> February 2013).

<sup>157</sup> *Chamtala*, 26 km to the west of the city center of Jalalabad lies in *Khogyani* at the border with *Surkh Rod*. *Chamtala* is not an affluent community. Along with *Sheikh Mesri*, it is one of the two Land Allocation Schemes (LAS) identified in *Nangarhar* province according to Decree No. 104 "On Land Distribution for Settlement of Eligible Returnees and IDPs" (December 2005): allocation of lots in *Chamtala* proved problematic since the inception of the LAS (Macdonald, February 9, 2011, p. 6). Families evicted from NVDA land in Farm-e-Hada in May 2012, were relocated in *Chamtala*, but "live in deplorable conditions - torn tents provided by agencies and men usually venturing to the city for casual labor. The evictees are using the water, health, education and other services that are available for *Chamtala* settlement but... these services are stretched" (HLP Task Force – Eastern Region, 2012, p. 12).



The *shaharak* of Ghazi Amanullah Khan<sup>158</sup> in Rodat district, whose water supply system was set up by the developer<sup>159</sup>, is possibly a model that JWSD managers regard with interest. The water management scheme in the settlement – with respect to water supply, storm-water drainage, and sewerage – seems to offer the residents the most advanced services on potable water and sanitation<sup>160</sup> across the whole metropolitan region. Whether this model can be replicated or scaled up by JWSD is, however, a different question. On the one hand, *Ghazi Amanullah Khan* is explicitly advertised as an affluent community – “luxurious” in fact (Najeeb Zarab Co., 2009) - probably targeting businessmen active in the cross border trade<sup>161</sup> through *Turkham* Gate. On the other, even with its market niche relatively small and well defined, the financial sustainability<sup>162</sup> of the new *shaharak* has yet to be proved, at least for the mid-term.

Inasmuch as the growth of the water supply grid squarely depends on the resources directly available to JWSD, its capacity for direct cost recovery is critical to determine whether and how an expansion of the water service catchment might take place. In 2012, JWSD water tariffs reportedly jumped from 6 Afghanis per cubic meter to 25 AFS/m<sup>3</sup>. If household connections were consolidated in a unique group of customers - all billed by meter - this rise might have accomplished a fourfold increase of the department revenues. But this is not the case; and the impact of higher tariffs might be marginal. In reality, not all customers are charged according to their actual water consumption in cubic meters; and when they are charged through a reading of the meter, they may still pay different tariffs.

Allegedly, only a customer out of three is billed by meter, while  $\frac{2}{3}$  of the users pay off an annual lump sum of 2,480 Afghanis. In 2012, roughly 3,000 households had meters installed in the homes: hence, they may have settled their quarterly bills at the increased rate, according to the reading from the meter. Instead, those customers who pay a yearly lump sum – seemingly the majority - seem to have escaped the tariff hike<sup>163</sup>, at least in part.

The low propensity to pay amortized connection fees among Jalalabad customers may be one of the factors behind the prevalence of non-meter connections. In 2010, 93% of the prospective users surveyed by CAWSA in Jalalabad opposed the plan to expand piped household connections through the payment of amortized connection fees (Osborn, 16 December, 2010)

The prevalence of customers who settle their JWSD bills through a lump sum payment would defy the doctrine tied up with direct cost recovery which maintains that through user charges “the users/customers can easily appreciate the value of the service for the money that they will pay for it” (Kabul Urban Reconstruction Project, 2008, p. 48). In keeping with this principle, it is commonly assumed that direct cost recovery mechanisms work “through water metering” (Djallalzada, 24 March 2010)

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<sup>158</sup> The website of the private development project reads: “*Ghazi Amanullah Khan* ... established in the year of 2008... located in a very nice, beautiful & secure area on right side of the Jalalabad *Torkham* main transit highway, just only at distance of about 15 Kilometers from evergreen city of Jalalabad ...is the first, the biggest and the most modern private city in the history of Afghanistan with having all the necessities of life such as electricity, drinking water system, canalization system... The project would be luxurious under beautiful planning and all life facilities & necessities” (Najeeb Zarab Co., 2009). Water supply and sewerage facilities feature prominently in the commercial of the development.

<sup>159</sup> “Najib Zarab... a former tea dealer who, also thanks to his ability at building solid relations with governor Shirzai, has become one of the top businessman in the East and in Afghanistan as a whole. Himself from the *Hazarbuz Kuchi* community (a nomadic and virtually separated branch of the *Mohmand* tribe), he is now heavily involved in the real estate and construction business” (Foschini, 2012). See also Mr Zarab's own website (Najeebzarab.af, 2009)

<sup>160</sup> Realised by Sambros International Group of Companies, based in Kabul: “*Ghazi Amanullah Khan* Housing Scheme in Jalalabad Province is another Major Project where Sambros International got the priority of supply and upgrading the water supply and canalization system, the project values over \$1 billion USD and are really proud of this achievement since we were the only distributor being awarded of this contract” (Sambros International, 2010).

<sup>161</sup> The developer has sale offices in Kabul, Jalalabad, Peshawar and Dubai (Najeeb Zarab Co., 2009)

<sup>162</sup> An initial cost evaluation – for instance – set the total investment for the development of the housing scheme in the range of 750 million US dollars between 2007 and 2011, with a rather “parsimonious” outlay on urban infrastructure: 150 million US dollars (Afghanistan Investment Support Agency, 2007). However, the water management system seems to have cost more than a billion (Sambros International, 2010): the capacity to recover such a substantial investment, whose dimension might have climbed over the years, has yet to be demonstrated.

<sup>163</sup> JWSD tariffs were examined with Eng Abdul Shukor, Eng Zia Ulhaq and Mr Merzajan Hemat on 19<sup>th</sup> Feb 2013

Moreover, JWSD has devised a distinct strategy for customers living in informal settlements. While JWSD install meters in the customers' homes regardless whether they stand on a planned section of the city or otherwise, the water utility applies a lower rate for the dwellers of informal settlements: reportedly a resident in an unplanned area may be charged just 50% of the full tariff: namely, 12 AFS/m<sup>3</sup>. The department's argument for lower water charges in Jalalabad informal settlements seems to be that residents in informal settlements need to be enticed into piped household connections, since they may have fewer motives to pay their tariff, as their residence in the city would be more precarious than for those customers who are settled in planned areas<sup>164</sup>. Allegedly, the bulk of discounted tariffs – which represent 25% of the total (Table 2.9) – involve customers in the south-eastern quadrants of the metropolitan core (*nahias* 2 and 4).

This practice – if confirmed - could raise a few questions. It is not completely clear, for instance, which definition of informal settlement is adopted by the utility and whether it coincides with the definition by the municipality<sup>165</sup>. Then, if discounted rates in informal urban areas were generally applied, there might be the risk to promote informal and unplanned urban growth.

Arguably, the actual tariff schedule enforced by the water department in Jalalabad demands further study and consideration.

Financing schemes must adjust to JWSD corporate vision of its mandate within the catchment. A role that matches the challenges ahead entails the capacity to operate in a catchment encompassing Jalalabad metropolitan region, a new determination to include waste water management within JWSD responsibilities, and a strategy to advance safe water sources for the whole population. Whether this shift in catchment and objectives can come about through collected water revenues is doubtful. In 2009 (Table 2.10), those revenues totaled up to AFS 3,919,403 - less than 80,750 USD – as compared with operating costs amounting to 5,445,930 AFS<sup>166</sup> (ca. 112,170 USD). Besides, the progress of JWSD catchment to the metropolitan region may call for concentration also on water sources that do not generate revenues – at least in the short term –, such as public standpipes. As taps located in public spaces belong to the non-revenue water group<sup>167</sup>, efforts to reach the metropolitan population also through public standpipes would probably diminish the percentage of water revenues over the total cost of water production. More importantly, an active role in the metropolitan region would necessitate a boost in water production. Water production in 2009 was just 2,176,379 m<sup>3</sup>, with a large share of the total volume – no less than 40% - lost through leakages in the existing waterlines. But a surge in production of safe water would demand significant investments on the network infrastructure which cannot be funded through JWSD own revenues. Likewise, should JWSD take “the long road to ensuring universal coverage” – as convincingly argued in a few studies (Beall & Schütte, August 2006, p. 62) – capital investments and annual depreciation costs might soar<sup>168</sup>.

Empirical evidence from USAID LARA work with residents in Campoona points to the importance of “non-revenue water” sources in JWSD portfolio to ensure safe water supply to communities settled in areas with high risk of contamination (Figure 4). Purportedly<sup>169</sup>, in gozar *Naw Abad*, where municipal mains are in place, publicly accessible sources of potable water average out to one every 200 households. Since *Naw Abad* has few piped household connections, it seems plausible that most sources of drinking water within the residents' homes are “unregulated shallow wells”<sup>170</sup>, at specific risk of contamination in that gozar. As water mains are in the area, a move towards water sources that

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<sup>164</sup> Evidence on how precarious residences in informal settlements are is very limited

<sup>165</sup> JWSD officials – for instance – reported that they bill differently – at a rates of 25 or 12 Afs / m<sup>3</sup> - residents in the same settlement. For instance, in Campoona and Araban, the department has both categories of customers: those paying the full tariff and those paying the discounted one.

<sup>166</sup> Osborn, 16 December, 2010

<sup>167</sup> Ibid

<sup>168</sup> For 2009 CAWSA estimated depreciation costs for 6,540,180 AFS, or about 125,000 USD

<sup>169</sup> Focus group discussion with property dealers from Campoona on 14<sup>th</sup> February 2013

<sup>170</sup> Osborn, 16 December, 2010

do not generate revenue yet are safe – e.g. public taps - would be cost-effective and would probably improve the public health status of that community.

**Table 2.10: JWSD costs versus revenues (2009)<sup>171</sup>**

Costs	USD <sup>172</sup>	Revenues	USD	% Total revenues over cost
Operating costs	112,171.06	Collected water revenues	80,728.84	72%
Overhead costs	8,490.84			950%
Depreciation costs	134,709.58			60%
Total costs	255,371.48			32%

Several city actors and urban development initiatives have supported Jalalabad water management services. International NGOs have been active across the entire metropolitan area, particularly in the construction of public tube-wells. UN-Habitat has promoted the formation of 74 Community Development Councils within settlements of the metropolitan core: among the CDC projects it sponsored, three concerned additional waterlines in the municipal network<sup>173</sup>. Community proposals on water services from the five central *nahias* were reviewed by UN-Habitat jointly with JWSD, to align the projects with the priorities of the water department while adding to the resources available to the water management system. The UN urban agency has worked in the metropolitan region as well, the sixth *nahia* (*Najmul Jahad*) in particular, where it carried through projects on water storage and distribution that included a reservoir, three boreholes and a few kilometers of pipelines.

### 2.2.2. Urban water quality

Systematic sampling from urban water sources and accurate testing of microbial and chemical quality is vital to improve the supply of safe water to Jalalabad residents. Likewise, monitoring of the substantial risk of

#### BOX 1: Water contamination in nahia 3

*Gozar Baboryan lies in the northern section of nahia 3, on the bank of Kabul River. A JWSD tubewell stands in a street, accessible to all the residents. This is the only deep well in the gozar. Many people living in the gozar have also shallow dug wells within their homes. Piped household connections are few and not reliable. For most of their house chores, women depend on dug wells, but for cooking and drinking water most of them are keen to use the tube well. The well built by JWSD is 40 to 45 metres deep, and its water was considered safe until 2011.*

*Sometime in the second half of 2011, the taste of the water changed suddenly. Women – who used to draw water from the tube well – had to rely on dug wells, which they do not trust to procure drinking water for the family.*

*Baboryan has an active women's CDC, led by Jamila. She convened a meeting to address the question. There, the women decided to contact JWSD. Officials from the water department visited the site (and apparently took samples).*

*After a few weeks, and a few trips to JWSD by Jamila, they were given chlorine for free to use with the water from the tubewell and from the dug wells.*

*[Told by Jamila, Baboryan CDC chairwoman]*

<sup>171</sup> USAID LARA elaborations from CAWSA figures for 1388 full year (21<sup>st</sup> March 2009 – 20<sup>th</sup> March 2010)

<sup>172</sup> Exchange rate on 31<sup>st</sup> December 2009

<sup>173</sup> Interview with Dr Niamatullah Rahimi, UN Habitat Senior Project Manager in Nangarhar (18<sup>th</sup> February 2013)

groundwater contamination has become imperative. Without sanitary landfills, relying on open dumps with no apparent measure to prevent leachate from reaching the aquifer, the presence of pollutants – pathogens and chemical contaminants – in Jalalabad groundwater might not be a wild guess. Indiscriminate disposal of untreated effluents from productive and residential activities seems an immediate threat to Jalalabad aquifer. Yet data are insufficient. While JWSD raised concerns about chemical and bacterial contamination from leachate with local government administrations<sup>174</sup>, an answer to JWSD legitimate concerns is complicated. Actually, the relevant stakeholders grope for data and information, while systematic monitoring of pollutants is inadequate or utterly missing. In this juncture, beside the municipal administration and JWSD, the provincial department of public health is an important actor, its environmental health office in particular.

In fact, the only laboratory that conducts tests on drinking water samples is within the provincial department of public health, in their environmental health office. Reportedly, the water department used to have this capability too, but JWSD lost its testing unit years ago. Hence, the warning mechanism on water contamination consists of the public health laboratory, the water department and the communities. The latter generally initiate the water testing process by alerting JWSD when the taste of drinking water from dug wells and boreholes suddenly changes; in turn, the provincial department calls in the public health laboratory. The sequence described here closely portrays the events in gozar *Baboryan* in 2011 (Box 1).

The current alert arrangements do not make up an early warning system, as the key institutions – JWSD and health department – deal with a possible crisis in a reactive rather than proactive form. If the female CDC in Baboryan had been less dynamic (Box1), community and JWSD alike would have probably overlooked the crisis and the water department would have not taken any remedial measure (albeit palliative).

Nonetheless, through reactive arrangements, several water sources have been singled out as unsafe owing to bacterial or chemical contamination (Table 2.11).

**Table 2.11:** *Water contamination in Jalalabad*

Drinking water source	Location	Type of contamination	Source
Public tube well with hand-pump Originally used for field irrigation and farming / now only for drinking water supply	<i>Nahia 3</i> Near Sharq Network TV/Radio	Bacterial contamination	• JWSD <sup>175</sup> • Environmental Office / Provincial Health Dept. <sup>176</sup>
Tube well conveying water towards JWSD reservoirs in <i>Ganda Chashma</i>	<i>Nahia 5</i> <i>Joy Haft</i>	Bacterial contamination Chemical contamination	• Environmental Office / Provincial Health Dept.

<sup>174</sup> Interview with JWSD technical director on 3<sup>rd</sup> March 2013

<sup>175</sup> Interviews with Eng Mahtab Gul Shigewal, JWSD technical director (27<sup>th</sup> February and 3<sup>rd</sup> March 2013); interviews with Eng Abdul Shukor and Eng Zia Ulhaq on 19<sup>th</sup> and 27<sup>th</sup> February 2013

<sup>176</sup> Semi-structured interview with Dr. M Yousuf Ahadi, head of the Environmental Office at the Provincial Health Department (27<sup>th</sup> February 2013)

JWSD tube well conveying water towards JWSD reservoirs in <i>Angoor Bagh</i>	<i>Nahia 2</i> <i>Angoor Bagh</i> Beside JWSD premises	Severe bacterial contamination Water not safe for human consumption	• Environmental Office / Provincial Health Dept.
<i>Karez</i> : “underground canal system that taps aquifers by gravity through a series of subsurface tunnels” <sup>177</sup> The karez conveys water to JWSD reservoirs in <i>Angoor Bagh</i>	<i>Shah Mard Khan</i> Immediately to the south of <i>nahia 2</i>	Bacterial contamination Possible chemical contamination from pesticide residues	• JWSD
<i>Karez</i> conveying water to JWSD reservoirs in <i>Angoor Bagh</i>	<i>Moqam Khan</i> <i>Farm e Hada</i> area Immediately to the south of <i>nahia 2</i> and 4	Bacterial contamination Possible chemical contamination from pesticide residues	• JWSD
Dug wells and tube wells extracting drinking water from the same superficial aquifer	<i>Joy Haft</i>	Bacterial contamination	• DACAAR <sup>178</sup>
Protected and unprotected dug wells Shallow sources mostly set over reclaimed land Average reported depth: 2 meters	<i>Campoona</i> area Particularly the gozars of <i>Awal, Naw Abad</i> and <i>Tawheed Abad</i> On the banks of Kabul River	Extensive contamination from raw sewage Possible contamination from pollutants in river waters Bacterial contamination Chemical contamination	• JWSD
Unprotected dug wells Generally within residents’ homes, to integrate other water points (mainly public tube wells) In a few gozars, they are reportedly used only as secondary source of drinking water	Across the entire metropolitan region	Bacterial contamination in various degrees	• JWSD

<sup>177</sup> Rout, June 2008

<sup>178</sup> Interview with Eng Sher Habib, responsible for water quality monitoring at Danish Committee for Aid to Afghan Refugees (DACAAR) on 27<sup>th</sup> February 2013

Table 2.11 highlights that water pollution affects both shallow sources – protected and unprotected dug wells – and deep wells drawing groundwater from contaminated aquifers. It shows that a few water sources that convey water to the city reservoirs present microbial and chemical contamination: storing water from contaminated sources, the main reservoirs may be at risk themselves. The issue of pollutants within city reservoirs and drinking water network is emphasized by the findings on municipal services from the 2010 baseline survey (RAMP UP East, October 2010): it appears that 42% of the respondents experienced dysentery, severe diarrhea or even cholera after drinking water from piped household connections (Table 2.12)

**Table 2.12:** *Water-borne diseases and water sources*

<b>Water Source</b>	<b>% of Households that Experienced Dysentery / Cholera / Severe Diarrhea (2010)<sup>179</sup></b>
<b>Shared Well with Neighbors</b>	43%
<b>Piped Water at Home</b>	42%
<b>Well on Property</b>	39%
<b>Public Standpipe</b>	32%

Although further investigation is certainly needed, Table 2.12 indicates that pollutants may affect not just dug wells, but JWSD water network too. The low inclination of Jalalabad households to pay amortized connection fees – only 7% expressed their willingness in 2010 (Osborn, 16 December, 2010) – may be explained also by the perception that water quality from piped household connections does not differ significantly from the water available through unimproved sources.

<sup>179</sup> Figure 12 in the baseline survey report (RAMP UP East, October 2010)

# CHAPTER THREE:

## 3. LAND USE ARRANGEMENTS

### 3.1. Local forces behind urbanization in Jalalabad region

#### 3.1.1. Shaping metropolitan development

Urbanization in *Nangarhar* and the creation of Jalalabad metropolitan region are fast-paced processes, marked by multiple interactions at different scales. Relative densification of a few poles – Jalalabad, as well as other centers in the surrounding districts of *Behsud* and *Surkh Rod* – is paralleled by more frequent and intense connections between nodes scattered across the 80-mile valley of the Kabul River. Urban settlements evolve from sparse hamlets (Figure 5) and entirely new centers forcefully rise from the *dasht*<sup>180</sup> and assert their city status, as in the case of Ghazi Amanullah Khan.

Local forces and external factors shape urban settlements in Jalalabad metropolitan region. Processes and institutions at various scales – from community to global markets - sway and organize accelerated urbanization in *Nangarhar*.

Local forces modeling the ongoing change in land uses include the farming interests linked with the agricultural vocation of the valley. Communal values, shared practices, tribal codes and Pashtun institutions, which frame the experiences of many *Nangarhar* communities, guide important aspects of the urban transformation too. Then, the flows of returnees - but also displaced people and economic migrants – re-entering the province or striving to settle in Jalalabad from *Kunar* and the whole eastern region shape demographic and social profiles of the new urban places. Finally, the new economic classes associated with trade and a few manufacturing initiatives hold sway on critical dimensions of the urban transition.

External factors constrain – sometimes challenge – local forces in their attempt to recast the landscape of the valley.

Natural constraints and the valley endowment of natural resources set physical boundaries to the urban change. The Kabul River forms the watershed where Jalalabad stands, and its confluence with the *Kunar* River in the proximity of *Khosh Gonbad* is a critical node in the delicate balance between metropolitan growth and natural limits. The watershed is crossed by intermittent streams (*khwar*) that carry large volumes of water late in springtime while they may turn dry for a few months in winter.

But urbanization in the Jalalabad region occurs often by unregulated land reclamation, filling waterways with solid waste to procure land for urban developments. Settlements encroaching over rivers and expanding over unstable soils, inadequate storm-water management, and lack of sewerage

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<sup>180</sup> *Dasht* means barren land, or desert, but the term covers a broad semantic area generally referred to non-irrigated rangeland. This is frequently the physical landscape of land conflicts in *Nangarhar* (Foschini, 2012)



become the recipe for urban floods, as physical constraints to metropolitan growth transform in threats to Jalalabad residents. The aquifer, too, draws the line at haphazard urban expansion: a groundwater contaminated by toxic effluents, leachate from open dumps, and raw sewage may convert into a public health hazard for the metropolitan region.

**Figure 5:** *Evolution of Bagrami, northwest of Jalalabad, between highway and Kabul River*



Local forces do not act in a void. Stakeholders from outside Jalalabad contain, check and regulate its growth. Definitely, the central state and its institutions intervene in the metropolitan expansion. Regulatory instruments, such as the city plan, are intended to give coherence and long-term perspective to the tumultuous growth. Yet, an outdated and antiquated master-plan (Box 2<sup>181</sup>) has turned into a straitjacket for the city, while the cabinet is expected to push through updated instruments, but the timeframe for their approval appears still imprecise to the managers of the city<sup>182</sup>. As Jalalabad stretches towards the surrounding plains, a heated demand for land is met by state rules that compel intricate procedures<sup>183</sup> for government-endorsed conversions of public lands, while state powers are sometimes felt to privilege “companies and wealthy individuals for speculative purposes” (Wily, February 2013, p. 7).

International and global dynamics set the stage where local forces will act and directly affect Jalalabad growth. Its commerce and the infrastructure to support it profit directly from the Afghanistan-Pakistan Transit Trade Agreement (APTTA), for instance. As the agreement sanctioned the role of Nangarhar as one of the two predetermined routes for commodities transiting through Pakistan and Afghanistan, APTTA reinforced the standing of Jalalabad corridor in the trade with the entire Asian sub-continent (Zyck, November 2011).

The interplay of local forces actively involved in the urban transition forges land use arrangements in Jalalabad metropolitan region. Agricultural interests, customary practices, migratory flows and business sector endlessly mould land use arrangements, planned, unplanned and spontaneous<sup>184</sup>. The scope of their actions is bounded by environmental constraints, state policies and international dynamics, which contribute to local processes for land use allocation, and influence land disputes and their resolution within the greater Jalalabad area.

## **Box 2: Jalalabad 1349 master-plan**

*The preparatory survey for the first city plan in 1327 (1948) was contemporary with the works for the highway between Kabul and Khyber Pass, as the new road was expected to enhance the relevance of Nangarhar provincial capital, a small rural town at the time. The actual master-plan, though, followed 22 years later, in 1349 (1970).*

*The old plan (Figure 6) identified a broad mesh of residential, service and commercial areas. It laid the basis for several land-use and zoning instruments (plan-e-tafsily), mostly in the southern portion of the city.*

*The most important detailed area plans developed in southern Jalalabad were in Rokhan Mina (nahia 4), Angoor Bagh and Toop Ghundi (nahia 2), and Joy Haft (nahia 5).*

*A few detailed plans were developed in the west too, in areas of nahia 3 designed according to Soviet standards of the '70s: Microrayon n.1, n. 2, n.3 and n.4. Most of Microrayon n.4 is now known as Araban.*

*The plans in the south and those in Microrayon – with the exception of n. 4 – were implemented, at least partially. They constitute the “planned” nucleus of nowadays Jalalabad.*

*The last plan-e-tafsily within the municipal boundaries was formulated in 1364 (1985) in Joy Haft and carried through by 1367 (1988).*

*In more than 25 years, since 1985, no new area plan has been approved for any urban section within the municipal boundaries: new plan-e-tafsily, in fact, could not comply with the provisions of the outdated master-plan, still in*

<sup>181</sup> Information in Box 2 derives mostly from the interview with Eng Abdul Baqi, head of the engineering directorate at DUDA on 16<sup>th</sup> February 2013. Additional information was provided by Eng Nasir, from the municipal construction department (interview on 13<sup>th</sup> February 2013)

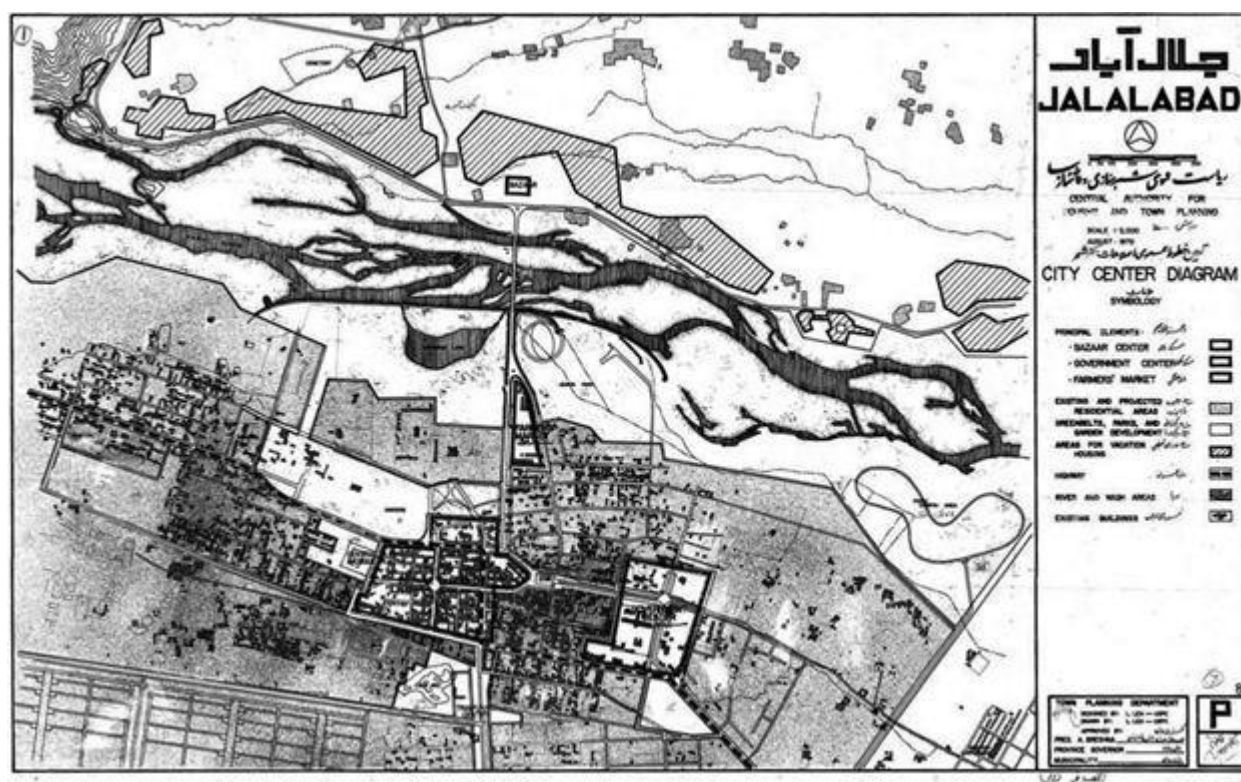
<sup>182</sup> Interview with Eng Nasir, head of the municipal construction department (13<sup>th</sup> February)

<sup>183</sup> Interview with Eng Mohammad Azim, head of the municipal land records department (*Mudiriati-e-Estimlak-e-Tawsi*)

<sup>184</sup> Turkstra & Popal, 2010



**Figure 6:** Old city center diagram of Jalalabad



### 3.1.2. Agricultural vocation, farming interests and urbanization in Jalalabad region

The agricultural vocation of *Nangarhar* is cast in the province economic traditions and history. Even when the dominance of agriculture is more presumptive than founded on empirical evidence, this presumption is part of the factors defining Jalalabad metropolitan region. From Jalalabad traders' association up to the University of Nangarhar<sup>185</sup> the belief that the province "can rightly be called the food basket for the whole of Afghanistan"<sup>186</sup> is widely shared. Truly, the lowlands around Jalalabad present the highest cropping intensity for irrigated lands in the whole country, with two and even three cropping seasons per year in most of the farms lying on the river banks. However, the four eastern provinces<sup>187</sup> make up only 6% of the total irrigated land in the country, 3% of the intermittently irrigated, and less than 1% of the rain-fed: "based on land availability, the farming potential ... is limited" (Favre, September 2005, p. 6).

But if the provincial role of "food basket" requires some qualification, Jalalabad recent advance as wholesale market for agricultural produce is clear-cut. In 2005, the city wholesale market of horticultural products counted roughly seventy traders, while Kandahar had about 300 and Kabul 1,600 (Favre, September 2005, p. 18). In 2011, however, the wholesalers of Jalalabad were more than 160 (USAID Afghanistan, June 2011). In 2005, most horticultural trade transited through *Turkham*, but bypassed Jalalabad, which dealt with a meagre 20,000 metric tons of produce. But after six years

<sup>185</sup> Interview with Aziz-Ur-Rahman "Arab", Vice President of the Craftsmen and Traders' National Union of Afghanistan, Nangarhar Provincial Directorate (12<sup>th</sup> February 2013); interview with Prof Sayed Dawood "Samim", Dean of the Faculty of Economy, University of Nangarhar (13<sup>th</sup> February 2013)

<sup>186</sup> Regional Rural Economic Regeneration Strategies, 2006, p. 3

<sup>187</sup> *Nangarhar, Laghman, Kunar and Nuristan*

of accelerated growth, in 2011, traders of Jalalabad handled approximately 30 million USD of horticultural products annually<sup>188</sup>.

Hence, the vocation as agricultural trading center appears solid and contributes to the urban hierarchy of spaces with a prominent position taken by the “*sabzi mandi*”, the agriculture market that spreads between *nahia* 3 and 5, in the area of *Joy Haft*. And, like the “*sabzi mandi*”, the many “*hada*”<sup>189</sup> scattered across and around the urban core - but particularly concentrated in the city southeast along the route of the highway to *Khyber Pass* - represent Jalalabad interface between the highly productive agriculture of the surrounding lowlands and the cross-border trade with Pakistan<sup>190</sup>.

The strong connection between urban areas of the metropolitan region - the five central *nahias* in particular - and the farming sector reflects in the urban incomes and livelihoods, whereas agriculture is a major source of income for 12% of the city residents and 23% of the urban households own livestock or poultry<sup>191</sup>.

Stakeholders in the urban property market within the metropolitan region tend to extol this rural vocation as a factor that supports the urbanization dynamics, attracting migrants from less endowed provinces and rural environments<sup>192</sup>. Because of the livelihoods opportunities offered by urban agriculture along the floodplains of Kabul River, it should not come as a surprise that farming potentialities are considered a pull factor drawing new residents to the metropolitan area. And in newly urbanizing contexts, such as *Bagrami* or *Afghan Mena*, fish farms dot the river banks and provide incomes to the new settlers.

Farming interests coalesce around a few main institutions. Among them, the Nangarhar Valley Development Authority (NVDA) stands out (Box 3) because of the substantial infrastructure it controls and the vast command area<sup>193</sup> of its canals (Table 3.1 and 3.2).

### **BOX 3: Nangarhar Valley Development Authority (NVDA)**

*The Development Authority was established in 1958. It follows the model of large scale irrigation schemes set up by central governments in developing countries - with bilateral or multilateral assistance - between the late 1940s and the 1970s.*

*Its infrastructure was realized with Soviet development aid and comprises a dam and hydroelectric power station completed in 1964. The 70-km main canal from Darunta till Muhamad Dar was inaugurated in 1972. It crosses the districts of Surkh Rod, Behsud, Bati Kot, Shinwar (Ghani Khel), and Muhmand Dara. The scheme, which includes secondary and tertiary canals, would need up to 65% of the power generated by the hydroelectric plant to operate at full capacity. Currently it gets far less.*

*NVDA is structured in 4 large farms. Farm 1 (4,408. 40 ha) edges nahia 5, 2 and 4. The olive and citrus orchards of Farm 1 (672 ha) lie mostly in the area of Farm-e-Hada. NVDA factory for the production of olive oil and pickles occupies 27 ha, to the south of the new gozar of Majbur Abad (nahia 4).*

*20% of Nangarhar farmland depends on NVDA canal. The irrigable area potentially served by the scheme is 39,000 ha. In its heyday, it employed 12,000 people. Today the workers are less than 900: more than 1,000 short of the staff it would need. Once fully operational, the scheme could directly generate 6,000 new farming jobs in the*

<sup>188</sup> Favre, September 2005, pp. 18-19; and USAID Afghanistan, June 2011

<sup>189</sup> *Hada* means station, and used to be the stations on the road to Pakistan and India where travelers and their caravans could stop and overnight. Now it refers to a station for passengers or goods.

<sup>190</sup> Aziz-Ur-Rahman “Arab”, Vice President of Jalalabad Traders’ Union, mentioned 10 *hadas* handling fruit and vegetables bound for Pakistan in *nahia* 4 (12<sup>th</sup> February 2013); USAID LARA provincial team identified other 10 active *hadas* in *nahia* 2 (18<sup>th</sup> – 19<sup>th</sup> February)

<sup>191</sup> ANDS Secretariat, August 2007, pp. 26, 28

<sup>192</sup> Focus group discussion with property dealers from Chak Noori, Dusraka, Zeba Hotel, Afghan Mena, Bagrami and Sehat-e-Ama on 14<sup>th</sup> February 2013

<sup>193</sup> The gross area commanded by an irrigation system inclusive of irrigated area, infrastructure and non-productive areas (Rout, June 2008)

**Table 3.1: NVDA irrigation scheme & Darunta hydropower station<sup>194</sup>**

Main NVDA irrigation canal		From : Darunta	/	To: Muhamad Dar
Total length	70 km	Usable length		58 km
Flow rate on completion (1972)	50 m <sup>3</sup> / sec	Actual flow rate (2013)		30 m <sup>3</sup> / sec
Irrigable Area	39,000 hectares	Irrigated area (2013)		ca. 25,000 hectares
Hydropower station	Darunta	Turbines: n. of units		3
Type of units	Vertical Kaplan (6 blade propeller)	Rated output / unit		3.85 MW
Total installed capacity	11.5 MW	Current estimated capacity		6 to 9 MW

**Table 3.2: NVDA assets and resources<sup>195</sup>**

NVDA owned land (1972)	17,000 ha	Alienated in Rodat district (Farm n. 5)	6,000 ha	% land alienated and lost (Farm 5)	35%
NVDA owned land (2013)	11,497.41 ha	Irrigated private land	14,000 ha	Land leased to private lessees	3,500 ha
Land leased in Farm 1 - Behsud	216 ha	Land leased in Farm 1 - Surkh Rod	2 ha	Total land leased in Farm 1	218 ha
Lease contracts in Behsud	30	Lease contracts in Surkh Rod	3	Lease contracts in Farm 1	33
Farm 1: Behsud and Surkh Rod	4,408.40 ha	Olive orchards in Farm 1	351.1 ha	NVDA orchards in Farm 1 - any fruit	672 ha
Olive orchards owned by NVDA	2,169.27 ha	Productive NVDA olive orchards	500 ha	% olive orchards in production	23%
Olive harvest (1973)	2,232 tons	Current olive harvest	100 tons	Production drop: 1973 – 2013	- 95%
NVDA olive processing plant	27 ha	NVDA plant max. capacity / year	8,000 tons	2012 output from NVDA plant	NA
Actual NVDA employees (1972)	12,000	Employees in 2013 organizational chart	2,000	Actual NVDA employees (2013)	900

Expectedly competition for land – and for water – has been intense and has spawned a number of conflicts. Yet, the capacity to integrate the canals of NVDA within Jalalabad metropolitan area might

<sup>194</sup> Sources for Table 3.1: IFHope; Hamid & NVDA, 2009; Hashmi, 2012; Rout, June 2008, p. 46; Ziarat Gul Rahel, NVDA Director General (interview on 13<sup>th</sup> February 2013); Mohammad Yousuf Hamdard, Head of NVDA Registry Department (6<sup>th</sup> March 2013); Munsif Noorani, NVDA Management Advisor (6<sup>th</sup> March 2013)

<sup>195</sup> Sources for Table 3.2: Ziarat Gul Rahel, NVDA Director General (13<sup>th</sup> February 2013); Mohammad Yousuf Hamdard, Head of NVDA Registry Department (6<sup>th</sup> March 2013); Munsif Noorani, NVDA Management Advisor (6<sup>th</sup> March 2013); Hamid & NVDA, 2009; Hashmi, 2012; Ekhtya, 2012

become an outstanding character of the land use arrangements that accompany urbanization in Nangarhar, and a major opportunity for balanced and sustainable development.

### 3.1.3. Settlements and land disputes along the canal

NVDA maintains that the issue at stake is not the metropolitan development of Jalalabad, neither their resistance to that development and to overall urban growth. In the Authority's account, what they oppose is not urbanization per se, but urban sprawl over precious irrigated lands<sup>196</sup>. They lament that residential encroachment over fields and orchards served by the irrigation scheme would wipe off highly productive, but scarce (Favre, September 2005), irrigated lowlands. Expansion towards rain-fed (*lalmi*) areas would not present problems to the NVDA scheme: irrigated farmlands would even benefit from handy urban markets in their proximity. Hence, the Authority's formula is straightforward: urban stakeholders – MUDA, GDMA, municipality and city utilities – should hold to the non-irrigated territory of the valley, which amounts to the majority of lands in *Behsud*, *Surkh Rod* and neighboring districts.

Conceivably, the leadership of the development authority is embittered by substantial losses that ensued from the compulsory alienation of lands in *Rodat* district, including the acreage ceded to the Ministry of Commerce for the realization of an industrial park (Box 4<sup>197</sup>). The land lost in *Rodat* - purportedly almost 35% of the initial overall endowment – constituted a fifth unit of the original structure in five farms, reduced now to four.

A planning custom that fails to include NVDA in the procedures to coordinate and regulate urban development may account for – or contribute to – a few of the land disputes along the canal. As Farm 1 is mostly at the very outskirts of the central metropolitan core, adjacent to *nahias* 4, 2 and 5, the Authority laments that inter-agency coordination and negotiation should precede the formulation of planning instruments.

However, building consensus between urban development actors and the valley development authority requires negotiation. The issue is where urban processes – primarily to meet demands for residential and commercial uses – should be permissible. While a broad agreement exists not to permit settlements over cultivated land, NVDA

#### BOX 4: Hisar-e-Shahi industrial park

*A presidential order in March 2006 ceded NVDA lands in Hisar-e-Shahi to the Afghanistan Investment Support Authority (AISA) to realise an industrial park. The Ministry of Agriculture was the actual owner of the land managed until 2006 by NVDA. The presidential order transferred to AISA also a second government property in Kamari, near Kabul, which belonged instead to the Ministry of Defence.*

*The layout of Hisar-e-Shahi Industrial Park (HIP) is in two phases. Phase 1 spans 107 hectares plotted to host about 100 enterprises. Jointly the two phases would add up to 1,100 jerib (220 ha) and 295 industrial lots. 20 hectares more might have been allocated for a treatment plant of industrial wastewater and solid waste.*

*HIP was expected to be operational in 2011 but in 2013 factories had not moved in yet, as adequate electric power was still missing. World Bank reckoned that even "with full power supply from the grid, Phase 1 of HIP would be fully occupied 11 years after the initial plot allocation". In some analysis, the substantial delay – which might have soured NVDA further – was also associated to the sheer dimension of the park, since the first phase only is three times larger than the average size of donor-funded industrial parks in the country (30 hectares).*

*The acreage of the infrastructure was probably influenced by concerns for the "overwhelming land title issue in the country" and the opportunity offered by a*

<sup>196</sup> Interview with Ziarat Gul Rahel, NVDA Director General (13th February 2013)

<sup>197</sup> Sources for Box 4 were the interviews with Richard Scarth, USAID LARA consultant (6<sup>th</sup> February 2013), and Ghulam Nabi Rahmanzai, AISA Regional Manager (16<sup>th</sup> February 2013), as well as the quarterly country update **Invalid source specified**. and completion report (The World Bank, March 21, 2012) by the World Bank



does not reckon among its assets only farmland that is currently farmed, but also the land that is also irrigated and even just irrigable.

The distinction between cultivate and irrigated is not academic. While, for instance, only 500 hectares of the NVDA olive orchards are currently productive (Table 3.2), the hectares not “under agricultural services and only irrigated” are four times as many: 2,169.27 (Hamid & NVDA, 2009). Moreover, NVDA Farm 1 stretches over 4,408. 40 irrigable hectares<sup>198</sup>; not all are presently in production; and they are irrigated only when available electric power permits<sup>199</sup>. Hence, the difference between cultivated land and irrigated / irrigable land is substantial.

A case in point is the provisions for urban expansion to the south of the ring road<sup>200</sup>, specifically from *nahia* 6, through the center of *Etihad Sayaf* (*Sayaf* Family), up to the proposed residential areas of *Syasang* (Figure 8). Jalalabad city planners accept that lands to the north of the ring road should be protected from residential encroachment as they are presently cultivated<sup>201</sup>. To the south and the southwest, instead, they envisage commercial development and “high residential blocks” (Figure 7). As a result, concurrence between NVDA and city planners is straightforward for the areas lying to the north of the ring road; but a compromise may prove more complex on the irrigable lands to the south of the ring road - between *Najmul Jahad* and *Syasang* (Figure 2) - where commercial and residential development is planned.

Planning issues that arise in the metropolitan region - and may sometimes escalate into conflicts among stakeholders - are often related to coordination. For instance, in 2005 (1384) the formulation of a *plan-e-tafsily* for the area of *Sheikh Mesri* by the planning authorities seemingly triggered a vehement denunciation from NVDA, that spoke of land grabbing. Perhaps, strain on local governance dynamics might have been avoided by attempts at negotiation before the issuance of a detailed land use and zoning plan.

Opposition to planning provisions intended to sanction and organize the metropolitan expansion might develop in various quarters, also beyond the irrigation scheme and its concerns. For various reasons, institutional actors around the metropolitan core may resent regulations introduced by a new master-plan and may stall the implementation of appropriate policies at metropolitan level. The district governments of *Behsud* and *Surkh Rod*, for instance, are relevant stakeholders in the process; however, they might object to the establishment of new municipal *nahias* on their land in absence of prior negotiation<sup>202</sup>, even if such a move appears logical and almost inevitable.

A review of land use arrangements within and around the irrigation scheme should tell the difference between protection of NVDA assets in the valley and environmentally sustainable growth. A few of NVDA activities have a substantial environmental impact as demonstrated by Table 2.11. The probable contamination from pesticide residues of the water flowing from the two *kharez* in *Moqam Khan* and *Shamard Khan* is clear indication that agriculture too can affect the natural resources of the metropolitan region: more so, because of the intensive nature of the farming practices pursued within the irrigation scheme.

Likewise, flooding hazards are not related only to the exponential growth of impervious surfaces. Truly, in urbanizing areas, storm-water does not soak any more into the ground and run-offs become a potential cause of downstream floods. However, a few of the most significant flooding events in the valley occurred close to the banks of the main canal. This is the case - for instance - of the floods in

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<sup>198</sup> Interviews with Mohammad Yousuf Hamdard, Head of NVDA Registry Department and Munsif Noorani, NVDA Management Advisor (6<sup>th</sup> March 2013)

<sup>199</sup> IWPR reports on NVDA struggle for electricity to operate the canal pumps and the opposing stances of Authority and provincial department of energy (Afghan Olive Farms Waiting for Water, 2012)

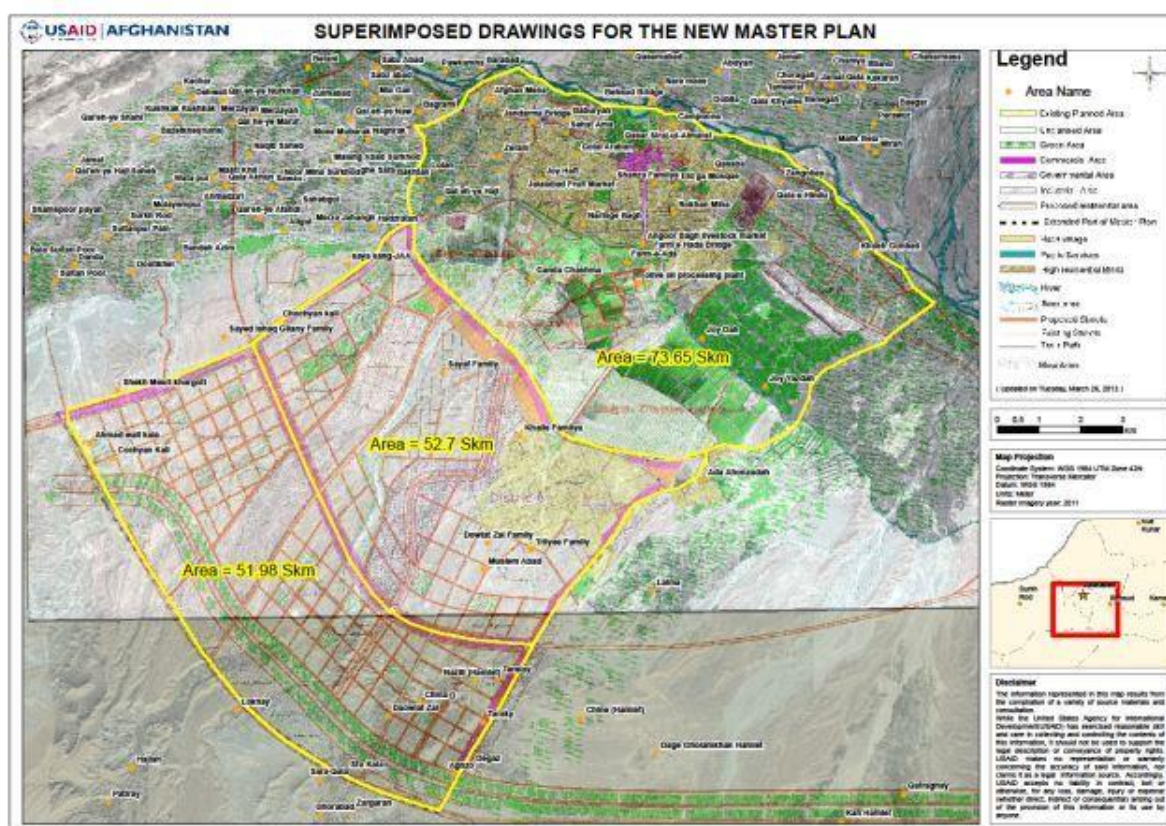
<sup>200</sup> The main thoroughfare skirting the southern half of Jalalabad

<sup>201</sup> Interview with Eng Abdul Baqi, head of the engineering directorate at DUDA (16<sup>th</sup> February 2013)

<sup>202</sup> Interviews with Abdul Khalim Baktane, head of the municipal planning department, and with Eng Nasir, head of the construction department: three new municipal *nahias* are planned over territories in the surrounding districts

June and July 2010 which destroyed almost 1400 homes, striking a few settlements within the irrigation scheme<sup>203</sup> (e.g. *Joy Dah* and *Joy Yazdah*).

**Figure 7: Drawings for the new planning instruments in Jalalabad**



An uncompromising stance by NVDA could hinder or undermine adoption and enforcement of necessary planning instruments at metropolitan scale. Hence, the complex balance between urban and rural functions in Jalalabad metropolitan area necessitates sustained multi-stakeholder coordination.

The situation in *Farm-e-Hada* casts light on disputes that may flare up within the command area of NVDA irrigation system (Figure 8).

### 3.1.4. Agricultural vocation and returnees' influx: a case in *Farm-e-Hada*

The forced eviction of 200 families in May 2012<sup>204</sup> from NVDA estate in *Farm-e-Hada* can be interpreted against a background of growing anxiety within the Authority for the repeated intrusions by competing metropolitan interests into the scheme command area and for the challenges to recover its lost possessions. While powerful actors, such as the Border Police<sup>205</sup>, can place insurmountable obstacles to the recovery, the returnees from the camp of *Zakhil* around *Peshawar* were a far less formidable opposition.

Table 3.3 provides an overview of NVDA lost lands, as reported by the Authority.

<sup>203</sup> Interview with Abdul Shakoor, ANDMA (Afghanistan National Disaster Management Authority) Jalalabad office, on 17<sup>th</sup> March 2013

<sup>204</sup> See Box 6 below and the report by HLP- TF (Housing, Land and Property - Task Force, 10 October 2012)

<sup>205</sup> NVDA laments that the headquarters of the Afghan Border Police (ABP) in *Ghaw Chak* was built over 80 jerib (16 ha) belonging to Farm n. 1 (interview with Mohammad Yousuf Hamdard on 6<sup>th</sup> March 2013)

**Table 3.3: NVDA lost and repossessed lands**<sup>206</sup>

NVDA lost assets	Surface in hectares	%
<b>Total</b>	1,005	100%
<b>In <i>Sheikh-Mesri</i> (<i>Surkh Rod</i> District)</b>	105	10%
<b>In <i>Samarkhel</i> (<i>Behsud</i> District)</b>	100	10%
<b>In <i>Farm-e-Hada</i> (north of ring road/ border with <i>nahia</i> 2)</b>	316	31%
<b>Other locations (mostly <i>Bati Kot</i> District)</b>	419	43%
<b>Repossessed in <i>Farm-e-Hada</i></b>	65	6%

NVDA dispossessed assets in Farm 1 (Figure 8) – namely the irrigated lands which were occupied in *Farm-e-Hada*, - or other properties lost in Jalalabad metropolitan area, in particular the lands in *Samarkhel* and *Sheikh Mesri*, are very different from the roughly 420 hectares which were appropriated outside the urbanizing region, mainly in the district of *Bati Kot*. In *Bati Kot*, properties were seized by encroaching farming interests; instead, in *Farm-e-Hada*, *Behsud* and *Surkh Rod*, returnees, IDPs and economic migrants entered the NVDA properties to set up dwellings over the lands of the irrigation scheme. Occupants trespassed and settled over the Authority's farmlands in various stages and years. But in *Bati Kot* the main use of the seized properties remained agricultural; instead, in *Farm-e-Hada*, *Sheikh Mesri* and *Samarkhel* it generally changed to residential.

In these latter areas, two local forces – among those that shape the metropolitan landscape of Jalalabad – confronted each other: farming interests embodied in the Irrigation Authority; and the flows of returnees, displaced people and economic migrants turning to Jalalabad from *Peshawar*, *Kunar*, *Laghman* and the outlying districts of *Nangarhar*.

An attempt to determine the number of returnees and displaced persons that settled – or tried to – in Jalalabad metropolitan region in 2012 depend on data necessarily imprecise and subject to underestimating the actual influx<sup>207</sup>. Nonetheless, two propositions seem reasonably well-grounded: the displaced people and returnees who moved to Jalalabad metropolitan region in 2012 were in the range of 40,000; and 2012 registered a sharp increase in the flows of returnees from Peshawar, which doubled between 2011 and 2012 (Box 5<sup>208</sup>). Unquestionably, 2002 was the year with the largest number of returnees moving to Jalalabad – almost 120,000 people<sup>209</sup> –; yet, 2012 ranks fourth for UNHCR-recorded arrivals from Pakistan<sup>210</sup>.

<sup>206</sup> Sources for Table 3.3: Ziarat Gul Rahel, NVDA Director General (13th February 2013), Mohammad Yousuf Hamdard, Head of NVDA Registry Department (6th March 2013)

<sup>207</sup> Convincingly, Ezatullah Waqar, ICLA Project Coordinator with the Norwegian Refugee Council (NRC) commented that official figures play down the actual migratory flows, inasmuch as they tend to overlook secondary displacement (interview on 12<sup>th</sup> February 2013)

<sup>208</sup> Sources for Box 5 were the interviews with Ezatullah Waqar (NRC) and Marcel Colun (UNHCR) on 12<sup>th</sup> February 2013), as well as UNHCR Global Appeal 2013 (UNHCR, 2013)

<sup>209</sup> 117,055 as to UNHCR estimate (AIMS & UNHCR Sub Office Jalalabad, 2003): obviously, this figure and a few of the estimates on Jalalabad population do not tally (Table 1.1)

<sup>210</sup> After 2002, 2007 and 2009 (interview with Marcel Colun, UNHCR Protection Officer on 12<sup>th</sup> February 2013)

A prominent feature of the flows from the Pakistani border is the proportion of returnees that - albeit hailing from *Kunar* province and expected to return to their homes according to UNHCR Voluntary Repatriation Form (VRF) – could not cope with the situation there, and veered instead towards the metropolitan region of Jalalabad. Arguably, they were pushed from *Kunar* by prevalent insecurity and by the absence of a Land Allocation Scheme<sup>211</sup>, and attracted to Jalalabad by urban services and the livelihoods opportunities of the city. In a tentative evaluation, villagers from *Kunar* make up almost 40% of the returnees heading to Jalalabad region<sup>212</sup>.

The flight from insecurity, but also landlessness and unemployment in *Kunar*, is not a new migratory movement, and certainly precedes 2012. In 2010, for instance, 1,820 households originally from the district of *Pech* passed the border from Pakistan to Afghanistan. Their VRFs stated that they would re-enter their homes: eventually, though, they could not be located in *Pech* by the relief agencies supposed to assist them there. In reality, they all had crossed the provincial border and settled in *Nangarhar*<sup>213</sup>.

As a result of secondary displacement<sup>214</sup>, among the settlers evicted from *Farm-e-Hada* 60% are from *Kunar* ( HLP Task Force – Eastern Region, 2012, p. 16).

The influx of returnees, displaced and economic migrants runs into a scanty choice of settlement options in Jalalabad metropolitan region<sup>215</sup>. Presidential Decree 104<sup>216</sup> endorses Land Allocation Schemes (LAS) in uncultivated government lands for landless returnees. In 2006, a first LAS was launched in *Sheikh Mesri, Surkh Rod*; this was followed by a second in *Chamtala, Khogyani* district at the border with *Surkh Rod*. The two schemes, though, seem overwhelmed by the number of demands, with up to 100,000 pending applications<sup>217</sup>.

#### **BOX 5: Returnees and displaced persons**

*UNHCR statistics on returnees from Pakistan rely on VRFs (Voluntary Repatriation Forms), the form returning households present at the border crossing. VRFs are granted to refugees who hold a POR (Proof of Registration), the document that authorizes the permanence in the host country. Undocumented returnees – without POR or VRF – are not included in UNHCR figures. However, IOM set about a specific tally for undocumented households.*

*UNHCR recorded 6,622 households bound for the four provinces of the Eastern Region - Nuristan, Kunar, Laghman, and Nangarhar – in 2012, with an increase of 107% on the figure in 2011 (3,194). IOM registered additional 4,132 households who had reached the Eastern Region without VRF in 2012. In NRC appraisal, the internally displaced families in the East were 1,784.*

*A rough computation would yield about 12,500 (12,538) households. This figure would make at least 75,000 people – displaced and returnees - seeking a place to settle in the Eastern Region, for 2012 only.*

*According to available VRFs, 65% (4,324) of the 6,622 households en route to the East were heading to Nangarhar. Conceivably, out of 75,000 returnees and displaced persons across the East in 2012, around 40,000 were*

<sup>211</sup> While no area in *Kunar* has been designated as Land Allocation Scheme (LAS), two were identified *Nangarhar*

<sup>212</sup> Interview with Marcel Colun, UNHCR Protection Officer on 12<sup>th</sup> February 2013. As to HLP – TF Eastern Region, the “majority of the returnees from *Kunar* are settling in *Nangarhar* province in informal settlements” ( HLP Task Force – Eastern Region, 2012, p. 8).

<sup>213</sup> Either in *Tangi* or in camps and settlements in *Behsud* district

<sup>214</sup> In this context, secondary displacement is intended as the movement by which a returnee may become an IDP if the conditions in the area of origin – where returnees are expected to resettle – force her/him to seek security, livelihoods and basic services in a different district or province

<sup>215</sup> Marcel Colun, UNHCR Protection Officer, 12<sup>th</sup> February 2013

<sup>216</sup> “On Land Distribution for Settlement of Eligible Returnees and IDPs” (December 2005)

<sup>217</sup> Ezatullah Waqar, NRC (12<sup>th</sup> February 2013), and HLP – TF Eastern Region (2012, p. 16)

#### **BOX 6: May 2012 eviction in Farm-e-Hada**

*After the floods in Peshawar of 2010, 190 families left Zakhil refugee camp and returned to Nangarhar. In October of the same year, they were accorded a temporary permit to settle in Farm-e-Hada. In May 2012, because of NVDA complaints, the Afghan police forcibly evicted the 190 households (1,051 people); 9 settlers were detained, and released only after the intervention of the Independent Human Rights Commission. In the operation, which included the demolition of all the dwellings, a child was reportedly wounded and eventually died.*

*All the households were then relocated to the village of Chamtala. The provincial department of Refugees and Repatriation consented to assigning residential plots to the evictees, even those without VRFs, provided they can demonstrate their residence in Nangarhar before leaving as refugees to Pakistan. But only a minority of the informal settlers in Farm-e-Hada were originally from Nangarhar: 113 families out of 190 are from Kunar.*

*The returnees ousted from Farm-e-Hada were not relocated to the LAS in Chamtala. They were instead settled to the nearby village, where competition for limited resources – water above all – might lead to conflicts between evicted households and local community. In the past, the village of Chamtala had already accommodated families relocated from Farm-e-Hada: 275 in 2008.*

*Seemingly, local villagers resent the way the LAS in Chamtala is managed. Established on 5<sup>th</sup> June 2008 and comprising 6,300 plots, its land was reportedly assigned by patronage, with disregards for the selection criteria for*

Then, PD 104 provides only for returnees and IDPS in their areas of origin as showed in their VRF (Macdonald, February 9, 2011). This directive precludes access to LAS plots in Nangarhar to returnees from Kunar: 40% of the estimated influx is diverted towards informal settlements. As a result, the onslaught on NVDA properties accelerates and occupation of government land such as *Farm-e-Hada* continues with worrying frequency.

Informal settlements over NVDA properties in *Farm-e-Hada* consist of two distinct models of occupation of government lands: both the models feature access and seizure without legitimate title. And in both the cases, the Authority threatened forced eviction. However, only for the more recent - and smaller - of the two informal settlements the threat materialized (Box 6<sup>218</sup>).

A first informal settlement rose over the irrigation scheme to the south of *Farm-e-Hada* Bridge (Photo 3.1), along NVDA olive orchard (Photos 3.2 and 3.3). The construction of shelters in Block 2 of Farm 1 (Figure 8) began in a rather distant past. The first dwellers are alleged to have entered the area more than twenty years ago, and reportedly a few of them had been displaced by the war in the '80s<sup>219</sup>. In 2008, their households numbered about 3,000 (UNHCR, November 2008). Protracted occupation of NVDA land has not led to the acquisition of property rights over the seized lots, and *Farm-e-Hada* settlers are not even counted in the humanitarian caseload<sup>220</sup>. Nevertheless, a process of institutional consolidation has unfolded. In 2012, *Farm-e-Hada* was recognized as a gozar of *nahia* 2<sup>221</sup>, the last instituted *gozar* in that urban district. Although residents are not granted the status of displaced or returnees, the area seems to proceed towards institutional development. A decision to

assert NVDA property rights in full over the estate in *Farm-e-Hada* would involve a major relocation<sup>222</sup> and considerable costs, both for the resident households and for the city administration.

<sup>218</sup> Sources for Box 6 were interviews with Ezatullah Waqar (NRC) and Marcel Colun (UNHCR) on 12th February 2013); HLP TF report (HLP Task Force – Eastern Region, 2012) and conference proceedings (Report of Forced Eviction Roundtable - Draft, 10 October 2012); Macdonald, February 9, 2011, p. 6; UNHCR, November 2008, p. 38;

<sup>219</sup> "In the Russian period" (UNHCR, November 2008, p. 38)

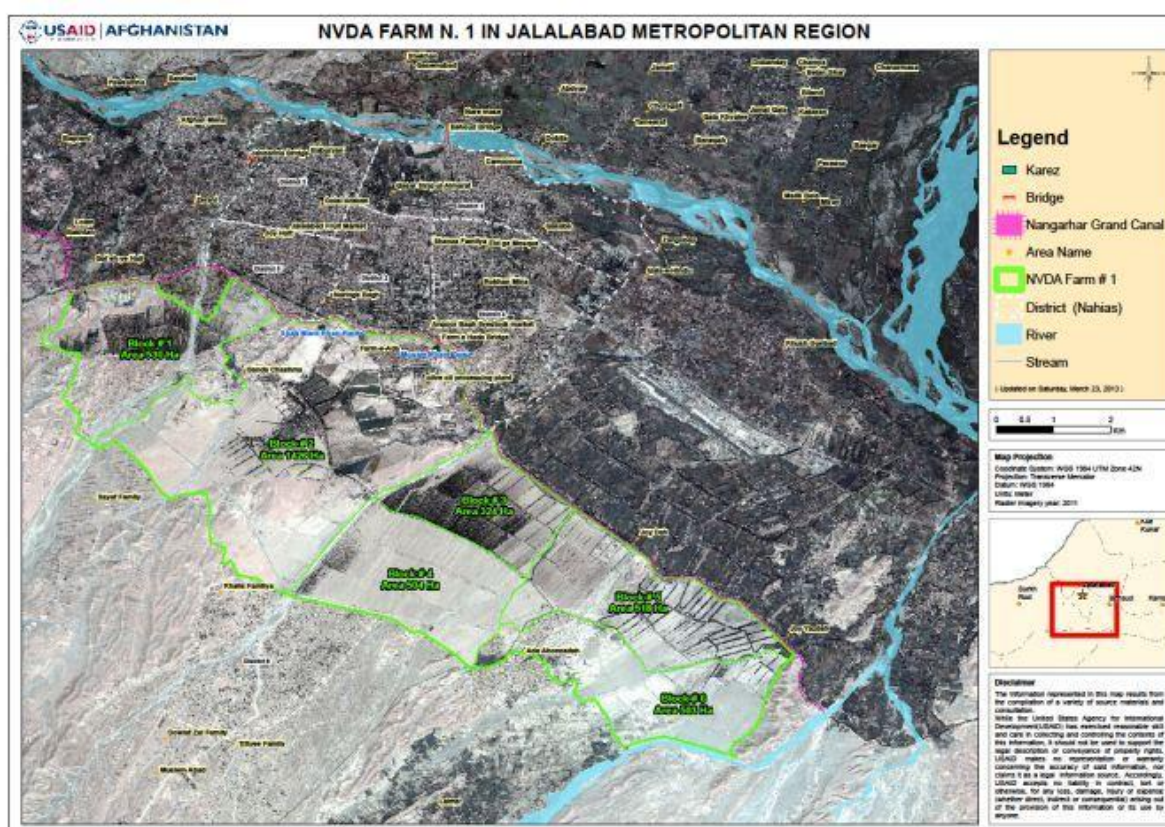
<sup>220</sup> UNHCR, November 2008, p. 38

<sup>221</sup> Amir Mohammad Mama, head of the municipal council of the city *wakil-e-gozars* (12<sup>th</sup> February 2013)

<sup>222</sup> It appears, in fact, that the current number of households is larger than the figure provided by UNHCR in 2008



**Figure 8: NVDA Farm 1 around Jalalabad central districts**



Forced eviction was instead carried out in the smaller settlement, formed much later (Box 6). An implicit analysis of costs and benefits might have decided which settlement to relocate forcibly (Photo 3.4), with lesser costs obviously associated with the smaller – although vulnerable – community.

The older and better entrenched settlement in *Farm-e-Hada*, in spite of its new *gozar* status, constitutes a substantial problem for the enforcement of new regulatory instruments - such as a city master plan - which affirm the title of NVDA over lands to the north of the ring road<sup>223</sup>. To complicate the issue, further residential and commercial expansion from *nahias* 2 and 4 seems likely, as it appears coherent with the prevailing orientation of Jalalabad metropolitan growth, towards Khyber Pass and to the southeast.

The creation of two new *gozars* in 2012, either inside or at the very border of Farm 1 – *Majboor Abad* in *nahia* 4, and *Farm-e-Hada* south of *nahia* 2 (Figure 1) – is evidence of this southeast trend<sup>224</sup>. NVDA properties cut the southeast development path. Then, a course of action leaning towards broader evictions – and even negotiated relocations – seems unrealistic, as its costs for the whole city and its social impact would be substantial.

A sustainable path that acknowledges metropolitan development as well as the importance of lowland irrigated agriculture must aim at a double compromise: about lands and about water. In fact, a double confrontation has broken out among competing interests in *Farm-e-Hada* and more in general along the banks of NVDA canal. Not only do settlers and rival economic actors<sup>225</sup> encroach on NVDA

<sup>223</sup> In the drawings at Figure 7, for instance, *Farm-e-Hada* is clearly designated as Agricultural Farm Area

<sup>224</sup> Jalalabad seems to expand to the northeast as well, beyond the boundaries of *nahia* 1. While the prevailing direction of the wholesale sector expansion is to the southeast, the retail sector retains a strong drive to the north-east (*nahia* 1). All the respondents – e.g. the heads of the municipal planning and construction departments - indicated that the three fastest growing *nahias* are n. 1, n. 2 and n. 4.

<sup>225</sup> For instance flour mills (Hashmi, 2012)



irrigated and potentially cultivated lands; but the utilization of the water from the canal contravenes the schedule set by the Authority to protect farming uses<sup>226</sup>.

Despite conflicts and recurrent disputes, the area of *Farm-e-Hada* and the entire metropolitan quadrant between *Ganda Chashma* and *Khosh Gonbad* (Figure 2) are an ideal space to promote sustainable rural-urban linkages (Tacoli, 2006). The opportunities are multiple and compatible with the environmental and infrastructural context. Strengthened rural urban linkages could support balanced metropolitan growth: from the practice of urban agriculture along NVDA canals, to an easy access by district farmers to “*sabzi mandi*” - the city horticultural market - through *Farm-e-Hada* bridge (Photo 3.1) and the *chilmetra*<sup>227</sup>; from the recovery of olives and oil production, to the vibrant livestock market in *Angoor Bagh*<sup>228</sup>, *nahia 2* (Photos 3.5 and 3.6).

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<sup>226</sup> The schedule set by NVDA forbids any domestic consumption of water from the canal during the day, in order to protect its use for farming purposes. That schedule is habitually ignored by residents (NVDA Director General on 13th February 2013). However, the most damaging infringement of NVDA water regulations is by milling enterprises which operate mainly outside Farm 1 (Hashmi, 2012).

<sup>227</sup> The *chilmetra* is an urban artery common to most Afghan city plans. Jalalabad *chilmetra* divides *nahia 2* from *nahia 4* up to the Directorate of Customs for about 3 km, of which 2 need asphaltting and repairing.

<sup>228</sup> Surveys of Jalalabad livestock market were conducted between September and October 2009 by Altai Consulting for the Peace Project **Invalid source specified**.

**Photo 3. 1 *Farm-e-Hada* Bridge over NVDA main irrigation canal**



**Photo 3. 2 *Farm-e-Hada* older settlement**



**Photo 3. 3 *Farm-e-Hada* older settlement: alley and canal**



**Photo 3. 4 *Farm-e-Hada*: after May 2012 eviction**



**Photo 3. 5 *Angoor Bagh* (nahia 2): livestock market**



**Photo 3. 6 *Angoor Bagh*: Kuchi sheep traders**





### 3.1.5. Metropolitan growth over marginal lands: unregulated reclamation and flood hazards

Accelerated urbanization in Jalalabad has piled up demographic pressure over marginal lands. In their quest for employment in the city, landless and jobless residents from rural districts migrate to Jalalabad (Opel, April 2005) where housing is an extremely scarce resource and where their economic situation may not necessarily improve, or not immediately<sup>229</sup>. Returnees and displaced people, too, are confronted by the high costs associated with settlement in Jalalabad<sup>230</sup> (ibid). Accordingly, housing and residential land prices are forcing low-income residents to marginal lands.

In Jalalabad, flooding comes out as the most significant factor of environmental risk: as a result, marginal lands lie in the floodplains of Kabul River, especially at its confluence with its tributaries, be it the *Kunar* River, or smaller intermittent streams (*khwar*) that cross the watershed and skirt around the metropolitan core in direction south to north (Figure 10).

Jalalabad real estate market reflects diligently the relative exposure to environmental hazards: property values are patterned on the relative distances of plots from a stream or incorporate their relative elevation over the floodplain. The closest to the river, the cheapest a property tends to be; the highest over the floodplain, the most expensive.

Table 3.4 and 3.5 illustrate the correlation between natural hazard and market price of residential plots in three different settlements along the banks of Kabul River (Figure 10): *Bagrami*, *Afghan Mena* and *Campoona* (*nahia* 1). Of course, various factors besides exposure to floods affect land values too. For instance, the relative distance from the city center and the presence of service, amenities and facilities influence the real estate prices and their differences between settlements.

**Table 3.4<sup>231</sup>:** *Relation between price (m<sup>2</sup>) of a residential plot and distance (meters) from Kabul River*

Settlement	Near river bank	From river (m)	Mid-way	From river (m)	Far	From river (m)	Other features adding to land values – Shared by all plots in each settlement
<i>Bagrami</i>	\$1.4	210	\$3.9	360	\$4.8	735	Livelihoods opportunities: fish farms No land disputes Potential access to electric network <sup>232</sup>
<i>Afghan Mena</i>	\$ 1.5	13	NA		\$5.6	931	Proximity to the highway Easy Access to core city Tightly knitted community & good security Well planned urban layout <i>Ariana</i> University

<sup>229</sup> Opel in 2005 found that 50% of the unemployed villagers who had migrated to Jalalabad had failed to improve their economic situation (April 2005, p. 27)

<sup>230</sup> Respondents concurred that residential land is far more expensive in Jalalabad than in Peshawar. For instance: Eng Abdul Khalil Latify, head of the provincial association of construction enterprises (12<sup>th</sup> February 2013); Ezatullah Waqar, ICLA Project Coordinator with NRC (12<sup>th</sup> February 2013)

<sup>231</sup> Sources: focus group discussion with property dealers from *Chak Nawri*, *Dusaraka*, *Zeba Hotel*, *Afghan Mena*, *Bagrami*, and *Sehat Mena* on 14<sup>th</sup> February 2013; direct survey by USAID LARA staff; analysis of high-resolution imagery

<sup>232</sup> The transmission line from Naghlu hydroelectric power plant to Jalalabad sub-station in Ghaw Chak runs few hundred meters away from the settlement of *Bagrami*: the closest residence is 696 meters from the line. Residents however rely on private generators for their electric supply

The neighborhoods of *Bagrami* and *Afghan Mena* are quite dissimilar metropolitan places, both in the western quadrant, but *Afghan Mena* closer to the city center. Due to easy access to the central urban districts<sup>233</sup> and higher service standards – which include a private university with about a thousand students - *Afghan Mena* command higher prices than the more recent residential area of *Bagrami*.

Nonetheless, in both the areas prices of residential lots rise as residences stand farther away from the floodplains and their environmental hazards. In *Afghan Mena*, as the average distance from the riverbank increases from 13 meters to 931 moving from north to south, the price per square meter soars almost four times.

Environmental hazards – insofar as they show in market values – encompass both the direct threat of flooding and the constraints set by a very high water-table to safe construction norms. Reportedly, in large tracts of land in *Afghan Mena*, the excavation of stout foundations is impossible and homeowners are compelled to limit their buildings to one-storey or run the risk of caving in<sup>234</sup>.

**Table 3.5:** *Relation between price (m<sup>2</sup>) of a residential plot and distance (meters) from Kabul River*

Gozar	Price <sup>235</sup> in US\$/m <sup>2</sup>	Average distance in meters	Other factors influencing prices
<b><i>Motorshoiee</i></b>	\$ 10.00	520	Proximity to the main markets A few asphalted roads Concrete-lined roadside storm-water ditches in a few sections Comparatively safe drinking water from hand-pumps A few connections with DABS <sup>236</sup> electric grid Land formally distributed by Najibullah administration ('80s)
<b><i>Khan Abad</i></b>	\$ 10.00	422	Same as <i>Motorshoiee</i>
<b><i>Naw Abad</i></b>	\$ 4.08	255	Poor storm-water drainage Poor water supply: few hand-pumps (1/200 households) No access to electric grid Poor accessibility by roads No waste collection
<b><i>Awal</i></b> <sup>237</sup>	\$ 12.50	200	Security of tenure, as the land was formally distributed by the municipality Similar to <i>Motorshoiee</i>
<b><i>Tawheed Abad</i></b>	\$ 2.8	172	Severe risk of floods Stands over land reclaimed by waste disposal (previous open dump) Similar services as in <i>Naw Abad</i>

<sup>233</sup> Participants in the focus group discussion noted that while collective taxis operate from *Afghan Mena* to the city centre (e.g. to the municipal government building) there is no such service from *Bagrami*.

<sup>234</sup> It was reported that along the river bank, the maximum depth for excavation is two metres

<sup>235</sup> Highest price per square metre fetched by a residential lot in each gozar

<sup>236</sup> Da Afghanistan Breshna Sherkat (DABS): state corporation for urban electric supply

<sup>237</sup> The plots that command the highest price are few units bordering with *Motorshoiee*

Presence of a slaughterhouse

Residents hold court-issued land titles (*Sharae-e-Qabala*)

Table 3.5 bears out the importance of the distance from the riverbank in determining the real estate value of properties, as residents consider the threat of floods a major location factor. Land prices in the *gozar* which lies closest to Kabul River, *Tawheed Abad*, are 260% lower than those in the *gozar* (*Motorshoiee*) that lie farthest. The striking price differential is not mitigated by the apparent security of tenure in *Tawheed Abad*. Although more residents of *Tawheed Abad* than anywhere else in *Campoona* hold court-issued titles over their lands (*Sharae-e-Qabala*) their properties command the lowest price.

In the case of *Campoona*, the property markets reflect a further environmental hazard brought about by unregulated land reclamation through solid waste disposal: prices express also the risk connected to a very unstable soil.

The drive towards marginal lands induced by demographic pressure in and around the city is not typical only of Jalalabad. And the role of reclamation as a way to expand the city over marginal lands (Habitat, 1991) - whose value could eventually move up the price ladder - is not circumscribed to Jalalabad or Afghanistan. Several examples are available<sup>238</sup> from across the world.

**Figure 9:** *The area of Campoona with five gozars*



However, in Jalalabad reclamation proceeds primarily through unregulated disposal of municipal solid waste and it occurs particularly in portions of the metropolitan space specifically identified as

<sup>238</sup> From the Netherlands (e.g. *Flevopolder*) to San Francisco or Dubai



prone to flooding (see Figure 10). As new residents are drawn to the reclaimed urban areas by the comparatively low prices, informal urban growth over reclaimed tracts of the valley waterways stands among the most severe and urgent challenges for Jalalabad city planners.

**Table 3.5<sup>239</sup>:** *The 2010 floods in the metropolitan area of Jalalabad*

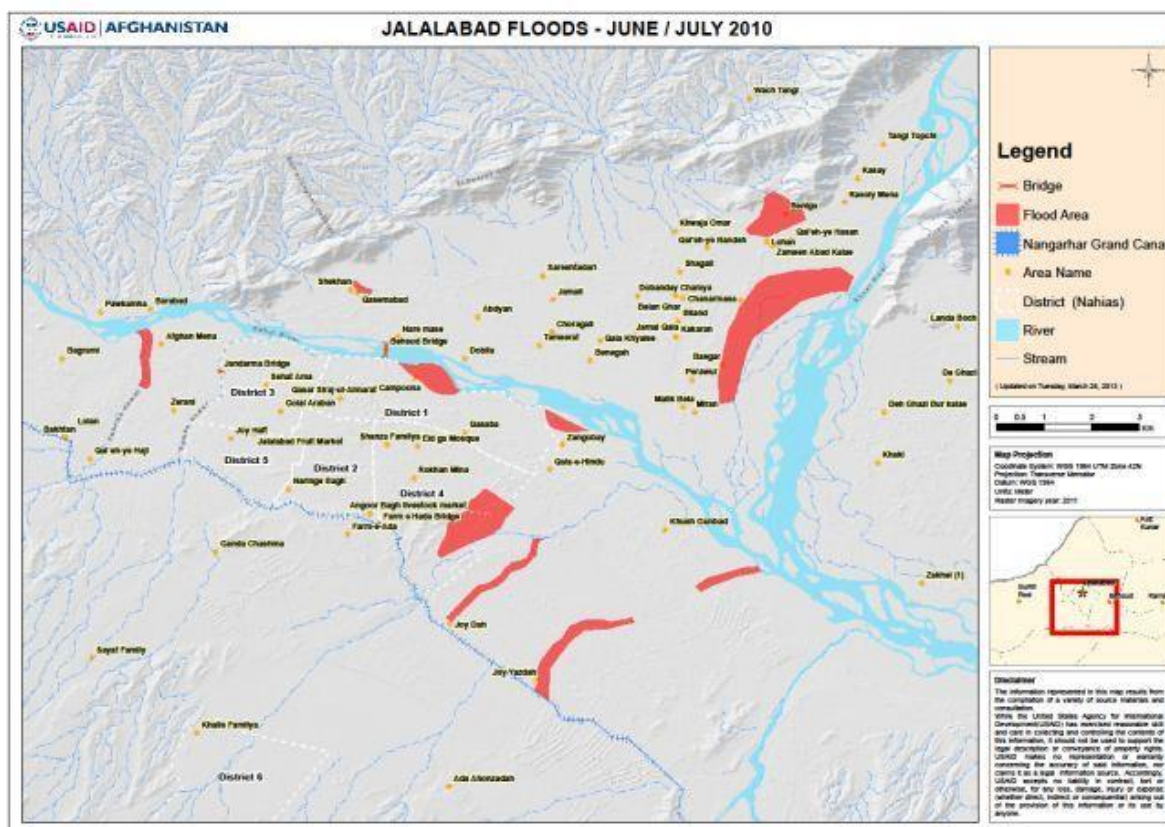
Locations	Month of the most severe flood in 2010	Casualties	Damaged assets and properties
Campoona: gozar <i>Awal</i>	April	None	34 homes
Campoona: gozar <i>Tawheed</i> <i>Abad &amp; Naw Abad</i>	April	None	34 homes
Campoona: gozar <i>Motorshoiee</i>	April	None	16 homes
Campoona: whole area	June & July	NA	
<i>Nahia 4: Beez</i>	June & July	NA	
<i>Farm Hada</i> (south border of <i>nahia 2</i> )	June & July	NA	
<i>Joy Dah (Behsud):</i> south of <i>nahia 4</i> , along the main canal	June & July	NA	
<i>Joy Yazdah (Behsud):</i> south of <i>nahia 4</i> , along the main canal	June & July	NA	
West quadrant ( <i>Surkh Rod</i> ): <i>Fabrika Khwar</i> valley, <i>Qul Urdo</i> area	June & July	NA	
<i>Zangobay / Zangoye (Behsud):</i> south floodplain of Kabul River	June & July	NA	
<i>Beniga (Behsud):</i> west floodplain of <i>Kunar</i> River	June & July	NA	
<i>Ishaq, Qala, Pirawar, Banda (Behsud):</i> confluence of <i>Kunar &amp; Kabul</i> rivers; north floodplain of Kabul river	June & July	NA	
<i>Qasim Abad, Behsud: Shikha, Abdulkhil.</i> North floodplain of Kabul River			
<i>Tangi Khwar (Behsud): Khanakai Tangi , Woch Kwar.</i> North floodplain of	July 2010	1 female adult, 1 child	299

1,360 homes

<sup>239</sup> Sources:

The threat of urban floods is increased by a few concomitant elements: a few arise from the city infrastructure and others from its morphology.

**Figure 10:** 2010 floods in Jalalabad metropolitan region



Three risk factors cause lack of drainage across Jalalabad urban space. Frequently clogged storm-water drains, absence of sewers - which forces the storm drainage system to carry urban wastewater - , and multiplied run-offs over impervious surfaces for the progressive asphaltting of most urban surface, all contribute to Jalalabad exposure to urban floods.

On the whole, as the metropolitan growth encroaches over the floodplains of Kabul River it wipes off natural flood storage capacity.

Besides, the morphology of the city with steep slopes from southwest to northeast<sup>240</sup> adds to Jalalabad vulnerability, with specific risks associated with faster and larger run-offs. It is remarkable that the flooding events in *gozar Awal* and *Tawheed Abad* (April, June and July 2010) were not caused by an inundation from the river side, but instead by storm-water from the city center. In 2010, Kabul River did not overflow its banks in *gozar Awal*, and the whole episode appears to be a clear downstream flood caused by poor drainage uphill.

The presence of *khwars* – intermittent streams – as tributaries of Kabul and *Kunar* rivers contributes to the complex hydrologic setting in the *Nangarhar Valley*. *Khwars* display a very unpredictable

<sup>240</sup> Figure 3 on Jalalabad watershed

regime, which ostensibly can trigger damaging floods, as demonstrated in Table 3.5 and Figure 10. The inundation between *Bagrami* and *Afghan Mena* in 2010 occurred along the course of *Fabrika Khwar*, while in the same year *Tangi Khwar* was responsible of the victims recorded in the northern areas of *Behsud* district. Conceivably, the behavior of these seasonal creeks might become progressively more inconsistent and variable - hence more unsafe - as seasonal patterns evolve with climate change.

Therefore, unpredictable hydrologic regimes, morphology of the city and encroachment over the floodplains turn into a significant menace of floods to Jalalabad communities settled over marginal lands. Unregulated land reclamation determines the loss of flood storage capacity along the river banks and the obstruction of flood-ways. They are compounded by inappropriate waste disposal – this too a feature of the encroachment over the floodplains –: as a result environmental crisis can come about among communities in Jalalabad central *nahias* – as it happened in 2010 – or, instead, floods can hit settlements lying downstream, such as *Samar Khail*, immediately after the confluence between Kunar and Kabul rivers.

In such context, it is advisable to contain encroachment over the waterways. While land reclamation can perhaps be considered in other situations or later stages of the urbanization process, it becomes now a major hazard, as storm-water drainage is poor, sewerage absent, and the city morphology risky.

Since the a risk of urban floods extends to communities downstream, efforts to regulate and limit reclamation of marginal lands should be set at metropolitan level, without overlooking settlements lying along Kabul River, beyond the central urban districts. In a metropolitan framework, the establishment of early warning mechanisms to alert residents of imminent floods and mitigate their damage is recommended.

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# ANNEX 1

Interviewees and participants in focus group discussions held in Jalalabad between February and March 2013

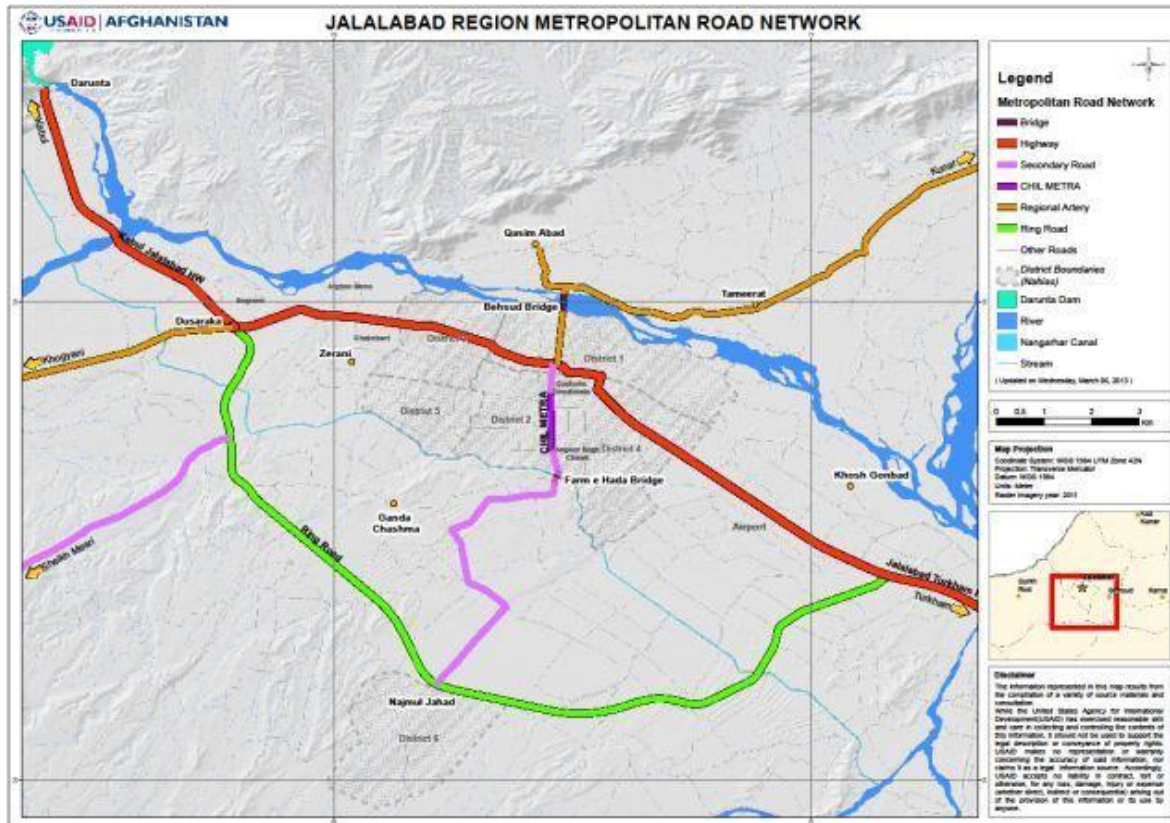
Name	Position	Date
<b>Haji Abdullah Akbar</b>	CDC Chairperson, gozar Awal	11 <sup>th</sup> February 2013
<b>Sheer Ali</b>	CDC Member, gozar Awal	11 <sup>th</sup> February 2013
<b>Haji Ghulam Sakhi</b>	CDC Member, gozar Awal	11 <sup>th</sup> February 2013
<b>Mohammad Afzal</b>	CDC Deputy, gozar Naw Abad	11 <sup>th</sup> February 2013
<b>Ezatullah Waqar</b>	ICLA Project Coordinator , NRC	12 <sup>th</sup> February 2013
<b>Marcel Colun</b>	Protection Officer, UNHCR	12 <sup>th</sup> February 2013
<b>Amir Mohammad Mama</b>	Head of the Wakil Council	12 <sup>th</sup> February 2013
<b>Aziz Ur Rahman “Arab”</b>	Vice President of the Craftsmen and Traders Union	12 <sup>th</sup> February 2013
<b>Abdul Khalil Latify</b>	Head of the Association of Construction Enterprises	12 <sup>th</sup> February 2013
<b>Abdul Khalim Baktane</b>	Head of the Municipal Planning Department	13 <sup>th</sup> February 2013
<b>Eng Nasir</b>	Head of the Municipal Construction Department	13 <sup>th</sup> February 2013
<b>Eng Barialay</b>	Head of the Municipal Sanitation Department	13 <sup>th</sup> February 2013
<b>Md. Azim</b>	Head of the Municipal Archive	13 <sup>th</sup> February 2013
<b>Prof Sayed Dawood “Samim”</b>	Dean of the Faculty of Economy at Nangarhar University	13 <sup>th</sup> February 2013
<b>Ahmad Shakeb Akbari</b>	Lecturer at the Faculty of Economy, Nangarhar University	13 <sup>th</sup> February 2013
<b>Ziarat Gul Rahel</b>	NVDA Director General	13 <sup>th</sup> February 2013
<b>Sayed Akim</b>	Property Dealer in Chak Nawri	14 <sup>th</sup> February 2013
<b>Zarawar Khan</b>	Property Dealer in Dusaraka	14 <sup>th</sup> February 2013
<b>Zalmai Sahil</b>	Property Dealer in Zeba Hotel	14 <sup>th</sup> February 2013
<b>Haji Juma Ghul</b>	Property Dealer in Afghan Mena	14 <sup>th</sup> February 2013
<b>Nur Ahmad</b>	Property Dealer in Bagrami	14 <sup>th</sup> February 2013
<b>Md. Asham</b>	Property Dealer in Sehat-e-Ama	14 <sup>th</sup> February 2013
<b>Yusuf Khan</b>	Property Dealer, gozar Khan Abad	14 <sup>th</sup> February 2013

<b>Zahidullah</b>	Property Dealer, gozar Awal	14 <sup>th</sup> February 2013
<b>Nur Ahmad Shah</b>	Property Dealer, gozar Awal	14 <sup>th</sup> February 2013
<b>Abdul Bakhi</b>	Head of Engineering Dept, DUDA	16 <sup>th</sup> February 2013
<b>Eng Asha Buddin</b>	Engineering Department, DUDA	16 <sup>th</sup> February 2013
<b>Syed Rahman</b>	Head of Finance, DUDA	16 <sup>th</sup> February 2013
<b>Eng Aminullah</b>	Head of Planning & Design Department, DUDA	16 <sup>th</sup> February 2013
<b>Ajmal Shams</b>	Chamber of Commerce	16 <sup>th</sup> February 2013
<b>Zia Urahman</b>	Chamber of Commerce	16 <sup>th</sup> February 2013
<b>Romal Miahil</b>	Chamber of Commerce	16 <sup>th</sup> February 2013
<b>Haji Ismael</b>	Executive Manager, Chamber of Commerce	16 <sup>th</sup> February 2013
<b>Ghulam Nabi Rahmanzai</b>	AISA Regional Manager	16 <sup>th</sup> February 2013
<b>Sayed Quias Saeedi</b>	Director, Provincial Department of Economy	16 <sup>th</sup> February 2013
<b>Dr Mukhlis Ahmad</b>	Director of Advisory Board, Chamber of Commerce	16 <sup>th</sup> February 2013
<b>Haji Majnoon</b>	Wakil, 4 <sup>th</sup> Section, Nahia 6	17 <sup>th</sup> February 2013
<b>Haji Gulagha</b>	Wakil, 2 <sup>nd</sup> Section, Nahia 6	17 <sup>th</sup> February 2013
<b>Haji Sher Hassan</b>	Wakil, 3 <sup>rd</sup> Section, Nahia	17 <sup>th</sup> February 2013
<b>Abdul Shokor</b>	Mudir, Nahia 6	17 <sup>th</sup> February 2013
<b>Mamor Mirza</b>	Property Dealer, 1 <sup>st</sup> Section, Nahia 6	17 <sup>th</sup> February 2013
<b>Zareen</b>	Property Dealer, 1 <sup>st</sup> Section, Nahia 6	17 <sup>th</sup> February 2013
<b>Atiqullah</b>	Property Dealer, 1 <sup>st</sup> Section, Nahia 6	17 <sup>th</sup> February 2013
<b>Hameedullah</b>	Property Dealer, 3 <sup>rd</sup> Section, Nahia 6	17 <sup>th</sup> February 2013
<b>Md. Nazeer</b>	Property Dealer, 2 <sup>nd</sup> Section, Nahia 6	17 <sup>th</sup> February
<b>Ashabudin</b>	Property Dealer, Qasim Abad	17 <sup>th</sup> February 2013
<b>Ajmal</b>	Property Dealer, Qasim Abad	17 <sup>th</sup> February 2013
<b>Tajawal “Safi”</b>	Finance Deputy, DABS	18 <sup>th</sup> February 2013
<b>Eng Ehsanullah “Shayan”</b>	Commercial, Deputy, DABS	18 <sup>th</sup> February 2013
<b>Dr Niamatullah Rahimi</b>	Senior Provincial Manager, UN Habitat	18 <sup>th</sup> February 2013
<b>Eng Sayed Snaullah Tahiry</b>	RAMP – UP East	18 <sup>th</sup> February 2013

<b>Laiq Shah</b>	USAID	18 <sup>th</sup> February 2013
<b>Eng Abdul Shokor</b>	JWSD	19 <sup>th</sup> February 2013
<b>Eng Zia Ulhaq</b>	JWSD	19 <sup>th</sup> February 2013
<b>Merzajan Hemat</b>	JWSD	19 <sup>th</sup> February 2013
<b>Belquees</b>	Female CDC Chair, gozar Awal	19 <sup>th</sup> February 2013
<b>Kubra</b>	Female CDC Chair, gozar Masjdi Qazi	19 <sup>th</sup> February 2013
<b>Husai</b>	Female CDC Member, gozar Awal	19 <sup>th</sup> February 2013
<b>Jamila</b>	Female CDC Chair, Baburyan	19 <sup>th</sup> February 2013
<b>Amir Mohammad</b>	Malik, Laj Gari, Qasim Abad	19 <sup>th</sup> February 2013
<b>Nawab</b>	Malik, Qasim Abad	19 <sup>th</sup> February 2013
<b>Wazir Gul</b>	Malik, Tagar, Qasim Abad	19 <sup>th</sup> February 2013
<b>Mahtab Gul Shigewal</b>	Technical Director, JWSD	3 <sup>rd</sup> March 2013
<b>Dr. M Yousuf Ahadi</b>	Head Environmental Unit, Department of Public Health	27 <sup>th</sup> February 2013
<b>Eng Sher Habib</b>	DACAAR	27 <sup>th</sup> February 2013
<b>Abdul Shakoor</b>	ANDMA	17 <sup>th</sup> March
<b>Mohammad Yousuf Hamdard</b>	Head of Registry Department, NVDA	6 <sup>th</sup> March 2013
<b>Munsif Noorani</b>	Management Advisor, NVDA	6 <sup>th</sup> March

# ANNEX 2

## Road Network around and within Jalalabad



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